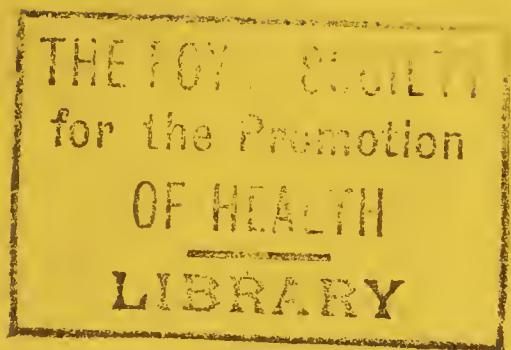


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1955 ANNUAL REPORT



DEPARTMENT OF NATIONAL
HEALTH AND WELFARE



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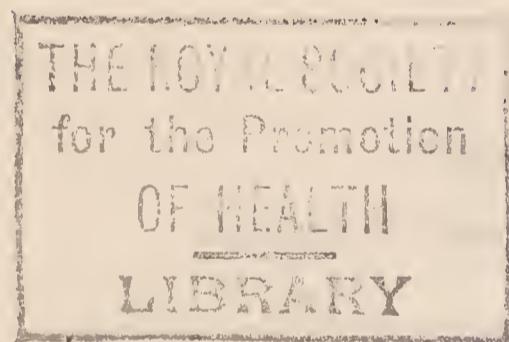


THE DEPARTMENT OF
NATIONAL HEALTH AND WELFARE

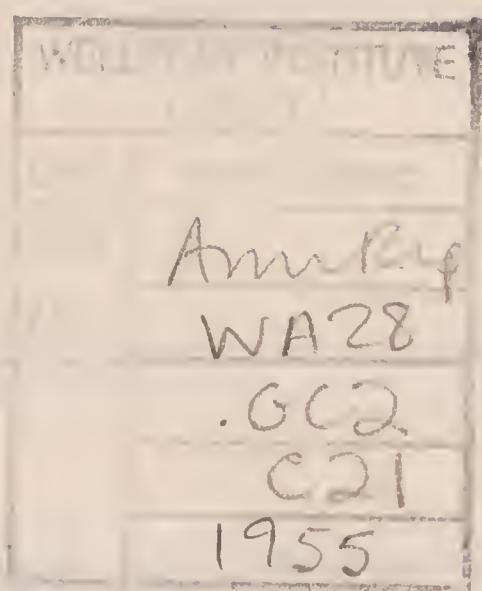
ANNUAL REPORT

FOR THE FISCAL YEAR
ENDED MARCH 31

1955



Edmond Cloutier, C.M.G., O.A., D.S.P.,
Queen's Printer and Controller of Stationery
Ottawa, 1955



To His Excellency the Right Honourable Vincent Massey, C.H., Governor-General and Commander-in-Chief of Canada.

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of National Health and Welfare for the fiscal year ended March 31, 1955.

Respectfully submitted,

PAUL MARTIN,
Minister of National Health and Welfare.



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To the Honourable Paul Martin, Q.C., M.P., LL.D., D.C.L., Minister of National Health and Welfare, Ottawa.

SIR:

During the year under review, continued progress was evident in the various areas of established departmental activity, while certain new responsibilities were accepted to widen the scope and effectiveness of its work. Among the year's highlights, three developments stand out: the inauguration of the Disability Allowance program; the advance preparations for the anticipated widespread use of the Salk polio vaccine; and the changed emphasis in civil defence resulting from the publication by the United States authorities of information on the effects of thermonuclear weapons. The implications of these and other developments relating to the Department's responsibilities are fully dealt with in this Report.

The extent of the Department's activities is indicated by the fact that for the year under review Parliament granted more than \$800,000,000 for its work—an increase of some \$30,000,000 over the previous fiscal year. This increase was accounted for, in large measure, by the normal annual growth in the major social welfare programs—old age security, family allowances, old age assistance, and allowances for the blind—as the result of Canada's steadily increasing population.

As has been noted, the major development on the welfare side was the inauguration of the federal-provincial program of Disability Allowances under the terms of the Disabled Persons Act, assented to by Parliament on June 26, 1954. By the end of the fiscal year, agreements had been signed or were in process of negotiation with all ten provinces and allowances were actually being paid in five provinces. Under the terms of this program, payments up to \$40.00 a month may be granted to totally and permanently disabled persons who meet the requirements of the Act and its Regulations. The allowances are administered provincially and their cost is shared equally by the Federal and Provincial governments.

On the health side, perhaps the most notable feature of the year's work was the detailed planning carried out to ensure that substantial supplies of rigidly tested Salk vaccine would be available for immediate use just as soon as its safety and effectiveness had been clearly demonstrated. It will be recalled that, during the summer and fall of 1954, a mass field trial—in which more than 1,800,000 children in the United States and Canada participated—was undertaken to assess the efficacy of the Salk vaccine. The results of this study were to be made known in the Spring of 1955. However, because the production and testing of the vaccine is a long and complex process extending over several months, it was decided in the Fall of 1954 that large-scale production of the vaccine should be initiated in Canada in advance of the publication of the results of the field trial so that supplies would be available in quantity for use during the 1955 polio season.

Accordingly, arrangements were worked out, in co-operation with the ten provincial departments of health, under which the federal and provincial governments would

share on a 50-50 basis the cost of underwriting the production of Salk vaccine by the Connaught Medical Research Laboratories at the University of Toronto. The vaccine thus produced was to be allocated to the various provinces on a per capita basis for administration to children in selected age groups. By the end of the fiscal year, sufficient vaccine for the immunization of more than 500,000 children had been provided to provincial and local health authorities for immediate release as soon as a favourable report on the field trial was announced.

All vaccine produced at Connaught Laboratories was subjected to the most rigid safety tests and samples of each lot were carefully retested at Ottawa by the Department's Laboratory of Hygiene.

It is of interest to note, in passing, that an important step in the research that led to the development of the Salk vaccine was the discovery of Medium 199 by Morgan, Morton and Parker during the course of a cancer research project carried out at the Connaught Medical Research Laboratories a few years ago. This medium proved to be a suitable agent for the large-scale culture of polio virus needed in the preparation of the vaccine. Two of the three scientists who undertook this work, Dr. Joseph Morgan and Miss Helen Morton (now Mrs. Helen Coval), are presently employed on the staff of the Department's Laboratory of Hygiene.

Turning to the Department's third area of responsibility, civil defence, it is our view that 1954-55 has been the most critical and yet, in many ways, the most productive year in the brief history of this departmental activity.

The Civil Defence College at Arnprior completed its first full year of operation. From its opening in January, 1954, to the end of the fiscal year in March, 1955, 1,999 candidates passed through the college. During this period, 74 different groups attended 22 types of courses; in addition, 15 conferences, sessions or special studies were conducted. A number of new courses were carried out for the first time during the year under review, including courses for physicians, pharmacists, police and other special groups, as well as a harbour study and a forum on natural disaster.

During the year under review, the accent in civil defence planning shifted to a policy of evacuation and shelter to meet the new threats posed by the hydrogen bomb and the dangers arising from radioactive fall-out. Tests of evacuation plans were held at St. John's, Newfoundland, and Brockville, Ontario, and plans were made for further tests in other cities.

To revert to some of our long-established responsibilities, the official opening took place on December 16, 1954, of an important addition to the Department's facilities, the new Virus Research Laboratory located at Tunney's Pasture in the west end of Ottawa. Already under construction in the same area is a new Headquarters for the Food and Drug Divisions which will, when completed late in 1955 or early 1956, provide the Department with a completely modern building specifically constructed for this specialized work. It might be noted here that, on July 1, 1954, the revised Food and Drugs Act, passed at the previous session of Parliament, was proclaimed and both the revised Act and its Regulations are now in operation.

The Opium and Narcotic Drug Act was amended by Parliament during the year under review to provide for more effective measures against the illicit traffic in drugs. Under the Act, as amended, the new offence of being in possession of drugs for the purpose of trafficking was established. By this, the onus is on the person found to be in illegal possession of drugs to prove that his possession was not for the purpose of trafficking. For this offence and for trafficking an increased penalty of up to fourteen

years was provided. The Act was also amended to permit the acceptance of telephoned prescriptions for medicated narcotic products.

As the result of field work carried out by the Department's Nutrition Division during the previous year, tables have now been prepared and distributed to physicians and other professional people, providing useful information on the average weights for height and age among Canadians.

With the co-operation of all ten provinces, the grants made available under the National Health Program continued to provide an effective stimulus to the development of health services, the construction of additional hospital facilities and the encouragement of fundamental research into many public health problems. Expenditures for the year totalled slightly over \$31,500,000, the highest for any of the seven years of the National Health Program's history.

The Department's Research Division placed a major emphasis on research in the field of health and hospital care and comprehensive documentation was prepared on health services. For example, the Division collaborated with the Bureau of Statistics in the preparation of a number of bulletins based on the Canadian Sickness Survey. Studies were also conducted concerning such matters as the extent and cost of illness and the utilization of health services. During the year, comparative analyses of health, welfare and social security expenditures in the different provinces and among various countries were completed. In addition, a number of studies were initiated in the broad field of child welfare.

As in previous years, there was a steady and continuing growth in the extent of most of the major social welfare programs administered in whole or in part by the Department. For example, at year's end, 5,169,000 children in 2,195,000 families were benefiting under the Family Allowances program with payments for the year exceeding \$366,000,000—an increase of nearly five per cent over the previous year. Expenditures on Old Age Security reached a total of more than \$354,000,000. During the year the number of persons 70 years of age and over who were receiving the universal old age security pension increased from 720,255 in April, 1954, to 745,620 during March, 1955.

For the federal-provincial Old Age Assistance and Blindness Allowance programs, the combined federal contribution during the year exceeded \$23,000,000. Under the Old Age Assistance Act, 94,625 needy persons 65 and over were receiving allowances at year's end, while total payments for the year reached nearly \$42,000,000—of which the federal share was 50 per cent. The Federal Government also contributed 75 per cent towards the cost of allowances for the blind. For this latter program, the federal share approximated \$3,000,000 and 8,122 blind persons were benefiting as at March 31, 1955.

In a novel public relations project, the Information Services Division staged an Exhibition of its work and procedures at Ottawa in May. Many parliamentarians, representatives of the press, radio and television, officials of government and voluntary agencies and others, who attended on invitation, completed questionnaires to assist the Department in the evaluation and future planning of its public health and welfare information activities. This program was further assisted by a Federal-Provincial Health Education Conference, also held in the Spring, and attended by representatives of all the provinces and some of the metropolitan health units.

As in the past, the Department continued to work closely with the various voluntary agencies and professional groups in the health and welfare fields and during the year effective co-operation was very much in evidence with these groups and with the

appropriate departments of government in the ten provinces. During the summer of 1954 two large international gatherings were held in Canada—the International Conference of Social Work and the World Congress of Mental Health—in both of which the Department played an important role.

Mr. Minister, we should not like to conclude this letter of transmission without making reference to the conscientiousness and to the generally high level of competence of the departmental staff. Special mention should also be made of the valuable assistance given to the Department by two auxiliary services provided by other federal departments through the Treasury and Translation Offices attached to this Department. It is our considered opinion that few government agencies are better served than the Department of National Health and Welfare and we here acknowledge our gratitude and thanks to the members of the Department's staff for their faithful and effective work during the year under review.

Respectfully submitted,

G. D. W. CAMERON,
*Deputy Minister of National Health
and Welfare (Health)*

GEORGE F. DAVIDSON,
*Deputy Minister of National Health
and Welfare (Health)*

OTTAWA, Canada.

HEALTH BRANCH

Introduction

Administration

The Health Branch is composed of a number of directorates and divisions grouped for administrative convenience according to their functions. Some administer certain federal Acts; others provide health services which are a departmental responsibility by statute; still others are primarily responsible for furnishing the provinces with financial, technical and advisory assistance in promoting a broad public health program of national scope.

General administrative organization has been previously covered, and there were only a few minor adjustments during the year. The responsibilities of the Director of Health Insurance Studies have been divided between two Principal Medical Officers responsible respectively for Health Insurance Studies and National Health Grants Administration within the Directorate of Health Services. A new division of Northern Health Services has become necessary to keep pace with the increasing responsibilities for the provision of medical care and public health services to the relatively unorganized but rapidly developing Northwest Territories. For the present, this service will continue to be directed by the Indian Health Services Directorate.

Trends and Developments

The Health Branch must, of course, keep well informed on the many developments in the ever-broadening field of health care. This section reviews in a general way some of the subjects of special interest during the past year because of new developments or because of changes in the nature of the problem.

Canadian Sickness Survey

For the first time in Canada a large body of information has been compiled concerning the nature and extent of ill health in the whole country, the volume and type of health services received by the population and the consumer's financial investment in health care. This information was collected over a period of a year by monthly visits to some 10,000 sample households, carefully chosen to represent different parts of the country.

The Canadian Sickness Survey, as it is officially known, was carried out during a 12-month period commencing in the autumn of 1950. It was initiated by the Department of National Health and Welfare and carried out by the ten provincial health departments with federal funds made available to the provinces through the National Health Program. The planning and organization of the survey was a joint undertaking of the Dominion Bureau of Statistics and this Department, in consultation with the provinces. The results have been released in a series of special compilations and reference papers, and it is anticipated that a complete report will be published in the coming year.

The first four publications dealt with family expenditures for various items of health care. During the survey year it was estimated that Canadians spent nearly \$375 million, or about \$82 per family on all items of health care, either directly or through the purchase of health care insurance. Of the consumer "health care dollar", about 23 cents was spent on physicians' services and 12 cents on hospital care; the costs of insurance protection against hospital and medical bills amounted to another 24 cents.

Of the remaining items, payments for drugs and appliances—an additional 20 cents, and dental care, about nine cents, represented the largest expenditures. Although the average Canadian family spent about \$82 on all items, the amounts spent per family increased in the higher income brackets; larger families, however, were not reported as spending as much per member as the smaller ones. Just over one-quarter of the families with incomes under \$1500 reported the purchase of some health care insurance, compared to one-half of those with incomes between \$1500 and \$3000, and two-thirds of families spent an average of \$100 each for all types of health care while families in Quebec, Ontario, the Prairies, and the Maritimes spent successively smaller amounts. The pattern of family spending in these regions varied considerably. Quebec families, for example, reported the highest per family expenditures for both prescribed and non-prescribed drugs, and although only 28 per cent of all Canadian families reported any expenditures on dental care, those in British Columbia averaged \$13 each on this item, nearly twice the national average.

As to the volume of illness, the average Canadian spent 5.8 days in bed at home or in hospital and was generally "disabled", i.e., unable to pursue normal activities, for an average of 11.9 days, during the year. Twenty out of every 100 Canadians experienced a complaint-free year, twenty-two reported at least one disturbance of health in the year, but not sufficiently disabling to interrupt their normal activities; ten were apparently prevented from such activities but not confined to bed and 48 were confined to bed, either at home or in hospital. From the Survey data, it has been estimated that on any day, about eight per cent of the Canadian population will report an illness, including about three per cent with an illness of a disabling nature. In 1954, these proportions would have represented about 1,200,000 persons and 450,000 persons respectively. As might be expected, the relative number of persons ill increases steeply after 25 years of age.

The information collected on the actual illnesses reported by families will allow important analyses of more than 75 diseases and conditions. Preliminary evidence shows that diseases of the respiratory system represented 54 per cent of the total of all illnesses, of the digestive system eight per cent, infective and parasitic diseases six per cent, and accidents, poisonings and violence five per cent. Nearly a million Canadians were estimated to be suffering from permanent physical disabilities, of whom 425,000 could be described as severely disabled and 100,000 as totally disabled. Six types of disabilities—heart disease, residual impairments due to accidents, arthritis and rheumatism, deafness, visual impairments and chronic disorders of the nervous system, in that order—accounted for 60 per cent of all the primary permanent disabilities reported.

During the Survey year, practising physicians provided over 22,500,000 home and office calls, about one-third of them in the home; about 2,000,000 visits were made to hospital outpatient clinics. However, only about 5,750,000 persons consulted a doctor in the home or office; or in other words, three out of every five Canadians did not see a physician in the home or office during the year. More women than men, however, received services, and as might have been expected, the rates for older persons were higher than for younger ones.

After the basic data on expenditures, illnesses, and services have been published, it is intended that special studies relating particular groups of the population, such as large families and low income families, to their illness experience and expenditure and service patterns, will be made available for detailed analysis.

Ionizing Radiation

The subject of ionizing radiation and its possible effects upon health is a matter of current public interest and concern. It is generally agreed that the use of nuclear radiation should now be regarded as a world-wide public health problem and not merely as a localized industrial health matter, of interest only to those working in a small number

of nuclear energy establishments. Increasing numbers of people are being exposed to radiation from such sources as x-rays and radioactive isotopes, as well as to the products of nuclear weapon testing. These types of radiation are listed both in the order of their historical development and the magnitude of their effects on human populations at the present time.

Until nuclear energy became available for use, relatively small numbers of people worked with radiation. During the past dozen years, however, there has been a steady increase in the number of radiation workers, and at every step the greatest care has been taken to make sure that as little radiation as possible should be received by them. That this program of radiation safety has been successful is indicated by the rarity of radiation injury among this group.

More recently, concern has been expressed about the possible genetic effects that might ultimately result from a large proportion of the general population being exposed to significant amounts of radiation, from any of the sources mentioned. Although the genetic problem is exceedingly complex, many important factors are known, and this country possesses the scientific potential to carry on continuing investigations in this field.

Fluoridation

The subject of artificial fluoridation of water supplies has attracted a great deal of public interest and produced some controversy. Research studies carried on on this continent indicate, however, that fluoridation has a substantial effect on the reduction in the incidence of dental caries. The procedure has been generally endorsed by medical, dental and public health associations of the North American continent and is increasingly being adopted as a community public health measure.

Poliomyelitis

The decrease in the reported incidence of poliomyelitis in Canada during the summer and fall of 1954 was a welcome relief from the abnormally high incidence of the preceding two years. Although sharp outbreaks occurred in Quebec in the Lake St. John area and in Prince Edward Island, in other provinces the incidence for the year approximated or was considerably lower than the five-year average for all Canada.

Gamma globulin continued to be made available for the protection of contacts of established cases of polio where circumstances seemed to favour its use. It was also recommended for use in selected groups exposed to poliomyelitis and for the protection of pregnant women as well as members of poliomyelitis nursing teams and their families.

The outcome of the field trial of the Salk polio vaccine, initiated during the spring of 1954, was the subject of much speculation. Had it been possible to produce the vaccine on short notice, much of the concern regarding its availability during the next epidemic season would have been obviated. Such was not the case, however, and it was necessary to plan and make firm commitments for production of the material at least six months in advance of the expected conclusion of this trial. Thus, in co-operation with provincial health authorities and with funds provided under the National Health Program matched by provincial contributions, a plan was devised and initiated in October, 1954. This called for production by the Connaught Medical Research Laboratories of 500,000 triple doses of vaccine for possible use, as indicated by the 1954 trials, during the following spring and summer seasons. This anticipation of favourable results of the field trials provided sufficient vaccine to enable provincial immunization programs to go forward in selected age groups of children immediately after announcement of the results.

The increase required in production facilities at the Connaught Laboratories and the necessary steps to test the vaccine for safety and potency represented a tremendous

undertaking in terms of marshalling personnel, equipment and facilities, including the large numbers of laboratory animals required. Safety tests were duplicated by the Biologics Control and Virus Sections of the Laboratory of Hygiene to doubly assure the freedom of the vaccine from untoward incident.

At the end of the fiscal year the outlook for the Salk vaccine protecting against paralytic poliomyelitis to a significant degree was favourable. However, it was appreciated that the final answer to the poliomyelitis problem depends upon the progressively increasing use of the material and improved modifications in the originally developed vaccine. This would be forthcoming as experience and knowledge are gained in this new development in preventive medicine.

Tuberculosis Control

One of the most striking trends in tuberculosis is the dramatic decline in deaths over the past few years. In the 15 years from 1938 to 1953 the number of persons dying in Canada from tuberculosis has decreased from 6,126 in 1938 to 1,810 in 1953. The death rate of 55 per 100,000 population in 1938 underwent a remarkable decline of 77% to 12.3 per 100,000 in 1953. From preliminary reports it appears that the national death rate in 1954 may have been under 10 for the first time in history.

The reasons for this striking decline in deaths are complex, but it is certain that the increasing emphasis on early case-finding and the advances in methods of treatment, notably the parallel development of antimicrobial therapy and improved surgical techniques, have been important factors.

It should be noted, however, that the decline in incidence of tuberculosis in the population has not kept pace with the decline in mortality. The highest morbidity ever recorded in Canada (128.2 per 100,000 population) occurred in 1944. In the nine years following this 1944 peak, the morbidity rate decreased 44% to 71.6 per 100,000 in 1953 but during the same nine-year period mortality decreased 74%. The period 1938 to 1953 also saw a substantial increase in the number of admissions to tuberculosis sanatoria, the 1938 admission rate of 91 per 100,000 population increasing to an all-time high of 144 per 100,000 in 1953.

Technical advances in photofluorographic equipment, permitting the rapid x-raying of large numbers of people at low cost, have made possible the striking developments in early case-finding seen in recent years. The number of x-rays taken in mass surveys in 1953 was approximately four times the number taken in 1944, while the rapid development of the general hospital x-ray program in Canada since 1950 has proven a productive method of early case-finding. It is obvious that the discovery of tuberculosis in its early stages is of benefit to the community as well as to the patient and that financial assistance under the National Health Grants program has played an important part in the control of tuberculosis in Canada.

Dominion Council of Health

While a number of federal-provincial committees act in an advisory capacity to the Department on health matters, the most important of these is undoubtedly the Dominion Council of Health. This group is composed of the Deputy Minister of National Health, who acts as chairman, and the Deputy Minister or Chief Health Officer of each of the provincial health departments with an additional five members appointed by the Governor-in-Council, representing such segments of the population as may have a special interest in public health matters or who are in a position to provide the essential understanding and co-operation between professional public health workers and civic administration.

Although the Council in its semi-annual meetings deals with many problems, the outstanding example of its usefulness during the past year was undoubtedly the degree

of co-operation achieved in the field of research, production and distribution of the Salk anti-polio vaccine.

Legislation

During the year several amendments to the Opium and Narcotic Drug Act and regulations were brought into force; and on July 1 the new Food and Drug Act and regulations was proclaimed.

International Health

The Department continued to assume its responsibilities in international health matters in providing information and assistance to the World Health Organization and other specialized agencies of the United Nations.

Financial Disbursements

An interesting aspect of the operation of the Health Branch is the breakdown of total financial outlay represented by the Departmental estimates. Following is a breakdown of the total estimates for the Branch for the fiscal year 1953-54, as well as 1954-55 for purposes of comparison:

	1953-54	Percentage	1954-55	Percentage
STATUTORY OBLIGATIONS.....	\$ 3,894,852	7.5	\$ 4,373,119	7.9
Quarantine and Leprosy.				
Immigration Medical Services.				
Sick Mariners Treatment Services.				
Public Health Engineering.				
Civil Service Health.				
Administration of the Food and Drugs and the Proprietary or Patent Medicines Acts.				
Administration of the Opium and Narcotic Drugs Act.				
CO-OPERATION WITH PROVINCES.....	2,332,333	4.5	2,124,185	3.8
Occupational Health.				
Epidemiology.				
Special Technical Services.				
Health Insurance Studies.				
MISCELLANEOUS GRANTS.....	154,850	0.3	168,850	0.3
Grants to Institutions Assisting Sailors.				
Grants to Health Organizations.				
GENERAL HEALTH GRANTS.....	30,000,000	57.6	31,750,001	57.2
INDIAN HEALTH SERVICES.....	15,584,530	29.9	16,920,538	30.5
NATIONAL HEALTH BRANCH-ADMINISTRATION.	139,748	0.2	162,430	0.3
	\$52,106,313	100%	\$55,499,123	100%

(Totals include Supplementary Estimates and allotment from Finance General Salaries Vote).

FOOD AND DRUGS FOOD AND DRUG DIRECTORATE

General

The Food and Drugs Act and the Proprietary or Patent Medicine Act govern the safety, purity and quality, as well as the labelling and advertising, of all foods and drugs and the safety of therapeutic devices and cosmetics. Both Acts are administered by the Food and Drug Directorate.

The new Food and Drugs Act and Regulations came into force on July 1, 1954.

A committee has been at work reviewing the Proprietary or Patent Medicine Act for the purpose of recommending its revision. When this Act was first passed in 1908, it applied solely to secret formula preparations for internal use. Following the 1919 amendment, medicines for external use were also brought under its control, and new provisions were introduced to deal with the advertising of such medicines and to provide more efficient controls over their composition. Except for amendments to the schedule to the Act, there have been no other changes since that time.

In the past 20 years especially, there have been great changes in methods of manufacture and merchandising and in the drugs employed. The Department has also gained considerable experience in dealing with these developments.

The purpose of the revision committee has been to draft proposals for amendments that would better satisfy present-day needs and embody such provisions as responsible bodies agree are basic for the protection of the public using packaged medicines for self-medication.

Many pharmaceutical products sold in Canada are manufactured abroad although there is an active and well-organized group manufacturing drugs in this country. There is a great variety in their products and in their production and distribution facilities, as well as in the size of the companies.

Following proclamation of the Food and Drugs Act on July 1, 1954, a complete survey of the Canadian drug industry was undertaken. It is estimated that more than 350 firms are engaged in manufacturing or distributing drugs in Canada (excluding retailers). The organizational portion of this project was completed by October, 1954, and by March 31, 1955, 317 preliminary inspections had been made. Of principal importance in drug firms is the existence of a control record system which enables the manufacturer to trace his products during manufacture and to check on the raw material used in them. This preliminary survey will provide information on which to base an enforcement program.

Some publicity has been given in the press to accidental overdosage of children with headache remedies. The particular responsibility of the Department, under the Food and Drugs Act and the Proprietary or Patent Medicine Act, is to ensure that packaged medicines sold to the public are properly labelled and that the labels bear appropriate warnings when necessary and likely to be useful. It should be understood that complete protection of the public depends on the user reading the label and following the directions. Further study was given by the officials of the Food and Drug Directorate not only to preparations containing acetylsalicylic acid, for which specific directions are now required and particularly for those intended for children, but also recommendations were made regarding the labeling of other products. In addition, it was recommended that laxative pills which contained strychnine should be reformulated

to omit strychnine. Also, products containing strychnine are not now acceptable for registration under the Proprietary or Patent Medicine Act.

As a result of an investigation of mortality in children caused by ingestion of poisonous substances, the Minister issued a statement stressing that care must be taken in the handling of household chemicals which accounted for over one-third of such fatalities in children under four years of age. Incidentally, no legislation exists in Canada to compel manufacturers to draw attention to the poisonous nature of many household chemicals or to require an antidote to be named on the labels.

The tocopherol method for detecting vegetable oils in dairy products has proven very useful in discouraging this type of adulteration. During the past year only one sample of butter, out of more than 6,270 examined, had a tocopherol content in excess of the permitted level. However, there have been indications that unethical processors might be using hydrogenated and refined marine oils as an adulterant. A method has been devised which is capable of detecting as little as five per cent of marine oils in the fat of dairy products. This method is now being applied to genuine samples of butter to establish a sound basis for regulatory action.

Since Canada is actively engaged in international trade in foods, drugs and cosmetics, the Food and Drug Directorate is interested in standards established by foreign governments and international authorities. Canada imports as well as exports a great many drugs and foods. Differences in standards and labelling requirements are in themselves hindrances to international trade although some individuality is necessary because of local customs or conditions. Because of this interest in requirements of other countries, members of the Directorate have continued to take part in certain scientific or technical activities of the World Health Organization, the United Nations Narcotic Commission, the United States Pharmacopoeia Committee of Revision, the Committee on the National Formulary, the British Pharmacopoeia Commission, the Association of Official Agricultural Chemists and other foreign or international groups.

The Directorate has continued to act as distributor of International and Canadian Biological Standards.

In addition to the international collaboration, it is necessary to co-operate with other departments of government either to give assistance to them or to prevent duplication of work and confusion. Work has been done with, or for, Agriculture, Fisheries, National Revenue, Crown Assets Disposal Corporation, the Royal Canadian Mounted Police and Veterans Affairs.

The Directorate has several panels or boards of experts to advise on technical and medical problems. These include the Advisory Panel on Foods, the Advisory Panel on Drugs, the Advisory Board on Proprietary or Patent Medicines, and the Drug Advisory Committee. Members of all boards or panels are physicians, pharmacists or scientists who are university professors, clinicians or technical people in industry, in addition to representatives of the Department. They are selected because of their knowledge and also because, in many instances, the advice of independent experts not in government service is of considerable advantage. Much of the work is carried on by correspondence but the Drug Advisory Committee meets at least once a year, the last meeting having been held in Ottawa on December 3, 1954.

Consumer Relations and Informational Work

Since the prime purpose of the Food and Drug Directorate is the protection of the public against health hazards and fraud in the advertising, sale and use of foods, drugs, cosmetics and medical devices, it is important that consumers should be aware of the existence of this organization so that they may know where to bring their complaints and other problems related to the subject. The officers of the Directorate speak for the public in dealing with industry and the trade, and it is important that the interests,

opinions and wishes of the public should be known to them. A close liaison with consumer groups also provides an opportunity for the government officers to explain to them the problems resulting from modern manufacturing and packaging procedures and what can reasonably be demanded under the circumstances.

The work of the Food and Drug Directorate in establishing and maintaining consumer relations has been strictly limited by lack of staff and has been confined to a program consisting of exhibits at a number of exhibitions and conventions across Canada, the preparation and distribution of a few leaflets explaining the work of the Directorate, the supplying of information on specific items to consumer groups for publication in their bulletins, a few press releases on matters of general interest, and the occasional free use of radio and press articles for explaining the purpose and work of the Directorate.

Members of the regional offices of the Directorate and the head office have given lectures to groups, including service organizations, home and school associations, professional societies and trade meetings.

Relations with other government departments both here and abroad continue to be cordial and are useful and, in many cases, necessary in administration.

Consideration is being given to the establishment in the near future of a section at headquarters to be responsible for organizing and co-ordinating the work of the Directorate in public relations so that the field may be efficiently covered.

INSPECTION SERVICES

Inspection Services constitute the legs, hands, eyes and ears of the Directorate. The inspectors are the contact men who check import shipments at customs, visit retailers, wholesalers and manufacturers on the domestic market, read, mark and inwardly digest the labels and advertising of food, drugs and cosmetics and generally keep the Directorate advised as to what is going on in the trade.

Correction of unsatisfactory conditions is made at the source so that the inspectors must trace back from the retail market to the manufacturer any products that are not in compliance with the Act or Regulations.

There are five regional offices and 21 district offices staffed with 59 inspectors in all, both in actual field work and in a supervisory capacity. When one considers the multitude of foods, drugs and cosmetics on the market, it is readily realized that these few inspectors must be thoroughly trained to be able to converse intelligently on subjects that range from simple labelling questions on foods, through discussion of allowable therapeutic claims for drugs to inspection of manufacturing establishments for sanitation requirements. Inspectors must be able to deal with all classes of people and to explain to the satisfaction of all the regulations under the Food and Drugs Act. Inspectors are recruited from recent university graduates and must have had training in chemistry or the allied sciences. After they are hired they are further trained to deal with the special problems that are met in the enforcement of the Act. For example, in the past year members of Inspection Services from each region have had special training in sanitary inspection, and selected inspectors have had training on inspection of drug manufacturing plants. In planning enforcement activities dealing with plant inspection, since all the establishments cannot be inspected at once, a system of priorities has been set up to place at the top those plants where it is most likely that unsanitary conditions exist and where such conditions constitute the most serious health hazards.

During the past year 28 prosecutions were carried to a successful conclusion and 12 seizures made. Because the Act is new, much of the enforcement program has been of an educational nature, with a consequent decrease in court actions. The provision in the former Act that allowed voluntary settlement out of court has been omitted from the present Act, and all penalties are now the result of court action. One interesting

seizure was that dealing with a large quantity of evaporated milk that contained vegetable fats or oils, involving over \$150,000. This, following on the large number of seizures of adulterated butter last year, has shown the dairy industry that our inspectors and analysts are difficult to evade.

A total of 3,970 labels of food, drugs and cosmetics were examined along with over 200 advertisements, cartons and folders; more than 17,000 radio broadcasts, and over 2,500 T.V. audio and video scripts were reviewed.

Tables at the end of this section indicate the number of samples examined at customs and on the domestic market. These give some indication of the extent and variety of the work carried out by the inspectors.

ADMINISTRATIVE SERVICES

The Administrative Services have the responsibility for the efficient operation of the following units:— Stores and Supplies, Stenographic and Typing Pool and the Clerical Pool. While the duties of the first two units are evident in that they are responsible for supply equipment, maintenance and repairs, drafting and duplicating and for the stenographic requirements, the clerical pool has a variety of work in the maintenance of accounts, review of travel claims, keeping of records of prosecutions and seizures, issuance of bulletins and preparing index cards on detained importations, maintenance of catalogues on labels, pharmaceutical preparations and other legislation related to food and drugs. They also are responsible for preparing and keeping up-to-date mailing lists covering 65,000 retail establishments, indices on 8,000 manufacturing concerns and 3,500 proprietary or patent medicine preparations, and the statistical punch card system.

They also supply other clerical help whenever possible to the other services, Laboratory and Inspection, by dealing with the clerical work involved in the processing of applications and renewals of drug licences, maintenance of a reference file of radio and television scripts, commercials, issuance of trade and staff information letters, field staff weekly bulletins, and processing of amendments to the Food and Drug Regulations.

In the past year, more than 110,000 questionnaires have been sent out to the retail and manufacturing establishments with regard to the issue of the new Office Consolidation of the Food and Drugs Act and Regulations; some 15,500 copies of the Consolidation have been distributed to individuals and establishments through the office of the Queen's Printer, 25 information letters sent to the trade and 17 to the field staff.

A review of the Food and Drug mailing lists is under way to find a more economical and yet more complete distribution.

PROPRIETARY OR PATENT MEDICINE DIVISION

The Proprietary or Patent Medicine Act, administered by the Proprietary or Patent Medicine Division of the Directorate, governs the manufacture and sale of secret formula packaged medicines offered to the Canadian public under proprietary or trade names.

Registration of any drug in this class is compulsory. The manufacturer submits his qualitative and quantitative formula, stating his therapeutic claims and directions for use. This information is assessed by an intra-departmental board consisting of medical officers and pharmacologists in the Department, and if the article otherwise meets the specifications of the Act, registration may be effected.

The Proprietary or Patent Medicine Advisory Board has contributed as usual to the administration of the Proprietary or Patent Medicine Act by giving advice on the safety of drugs and the suitability of preparations for registration under the Act. The Board has also examined preparations containing alcohol in excess of 2½% submitted for regis-

tration as to their unsuitability for use as beverages and has given advice on the safe maximum single and daily doses of drugs.

Registered preparations are licensed on a year-to-year basis. This permits of an opportunity to review each preparation in the light of experience in use or advances in medical knowledge and to exercise adequate control over such preparations in the interest of the public.

Under this system of dual control by registration and licence, in operation since 1919, worthless as well as harmful products are screened out; promises of cures, and false, exaggerated or misleading claims are prohibited. The dosage of scheduled drugs must be within the limits defined by the Advisory Board; alcoholic preparations must be sufficiently medicated to (prevent) their use as intoxicants. Narcotics, barbiturates, sulphas and prescription drugs are not allowed. With respect to new drugs, the attitude of the administration is that their safety must first be established by a wide period of use, under competent supervision, before they can be considered for inclusion in a preparation eligible for registration. Preparations recommended for serious diseases are not accepted for registration.

During the year the registration of 2,929 preparations was reviewed. Out of 259 new medicines examined for registration, 181 were approved and 78 rejected. Approximately 5,000 labels, wrappers and newspaper advertisements were examined and criticized. In addition, approximately 7,000 radio commercials were reviewed in co-operation with the Canadian Broadcasting Corporation which requires that radio announcements dealing with proprietary medicines be submitted to the Department before broadcasting.

Food and drug inspectors have followed the customary procedure in taking samples of drugs from the domestic market for examination. Advice has been given to manufacturers in respect to proprietary medicines in connection with requirements under the Act. Consultation, advice and persuasion continue to be useful methods in obtaining improved standards of proprietary medicines.

MEDICAL SECTION

In December, 1953, a medical section was established in the Directorate. The function of this section is to give advice to the Director and other officers of the Directorate on medical problems related to the administration of the Food and Drugs Act and the Proprietary or Patent Medicine Act, to maintain liaison with the medical profession and to assist in the review of new drug submissions.

The control of new drugs has been established in Canada and has met with the approval of the pharmaceutical industry as well as performing the function of protecting the public health. Drug manufacturers are required to wait until clearance has been received from the Department before marketing new drugs. A clearance may usually be given within two months, but a period of six months is set as the maximum for a decision. A tabulation of the number of submissions reviewed since the inauguration of this control is as follows,—

September 1, 1951 - March 31, 1952	= 47
April 1, 1952	- March 31, 1953 = 122
April 1, 1953	- March 31, 1954 = 165
April 1, 1954	- March 31, 1955 = 145

In addition, during 1954-55, 61 submissions were reviewed and judged not to be new drugs. This indicates that manufacturers do not market products whose status is uncertain until receiving clearance from the Department.

LABORATORY SERVICES

Laboratory services consist of six laboratories—a central one in Ottawa and regional laboratories in each of five regions. In addition, as a means of expediting the handling

of imports, sub-laboratories operate in Saint John, N.B., St. John's, Nfld., and Sydney, N.S., in connection with the Halifax laboratory. All the regional laboratories are equipped to analyze most of the samples of foods and drugs collected by the inspectors attached to the regional office, and they collaborate with the central laboratory in studies of methods and standards. The central laboratory is employed chiefly in investigational and research work for the development of standards and methods of assay or the analysis of foods and drugs, in studies of the metabolism of foods and the mode of action of drugs. It also carries out all assays requiring animal experiments and conducts special surveys of products. The central laboratory is divided into ten sections, and a summary of the investigational work conducted in each section during the year follows.

During the past year the pharmaceutical chemistry and the vitamin and nutrition sections have continued their collaboration in the study to relate *in vitro* disintegration time of coated tablets with their physiological availability.

It had been found previously that sugar-coated tablets which did not disintegrate *in vitro* in 60 minutes were not completely available to the human subjects as judged by urinary excretion of riboflavin. The absence of extra riboflavin in the urine following the ingestion of a tablet was interpreted as indicating low availability of riboflavin from that particular tablet. This work has been criticized by the Technical Committee of the Canadian Pharmaceutical Manufacturers Association for two reasons: (1) that some tablets might release their riboflavin content at such a rate that it would be utilized as quickly as it was released and, hence, would not be excreted in the urine, and (2) that a non-metabolite should have been used rather than riboflavin. Using eight human volunteers, it has been shown that for one, three and five mg. amounts of riboflavin the excretion is the same whether these amounts are taken as a single dose or in ten small doses totalling the same amount.

The non-metabolite chosen for study was sodium para-aminosalicylate. It was ingested in the form of tablets, having varying *in vitro* disintegration times. It has been found, as in the case of riboflavin tablets, that the longer the *in vitro* disintegration time, the lower is the physiological availability of the sodium para-aminosalicylate from a particular tablet. In this case it appears that tablets having an *in vitro* disintegration time of more than 65 minutes may not be physiologically available. In general, the findings on both riboflavin excretion and para-aminosalicylate excretion confirm the conclusions reached previously and support the validity of the proposed disintegration test for tablets.

The following are examples of the studies conducted in the various sections of laboratory services in the central laboratory at Ottawa. Much of the fundamental research forming part of these studies has been reported in scientific literature.

Food Chemistry Section

The development of methods for the detection of the adulteration of dairy products has been continued. The tocopherol procedure developed in this laboratory has given excellent results in detecting the presence of vegetable oils. However, hydrogenated marine oils have properties which make them very satisfactory adulterants, but the tocopherol procedure is of little or no value in detecting their presence. It has been found that marine oils dissolved in chloroform and acetic acid give intense green to reddish colours when treated with bromine. A method based on this reaction has been developed which is capable of detecting as little as 5 per cent of hydrogenated marine oils in the fat of dairy products.

During the past year a new antioxidant, butylated hydroxytoluene, has been suggested for use in fats and fatty foods. Before recommending the addition of this material to the list of permitted preservatives, it was necessary to develop a satisfactory method

for its determination. This antioxidant was removed by steam distillation of the fat in the presence of a calcium salt, and a colorimetric technique was applied to determine the amount of butylated hydroxytoluene in the distillate.

Two hundred and twenty food products were analyzed for the flavouring component, coumarin. The procedure employed involved extraction of the flavouring ingredients, followed by the development of a paper chromatogram. The paper was then sprayed with a special reagent and examined under ultraviolet light. The coumarin appears, under these circumstances, as an intense yellowish-white spot. A total of 19 samples containing coumarin were found in this survey.

Zinc can be determined satisfactorily in food products by a spectrographic technique; but, because many laboratories do not have this type of equipment, it was considered desirable to develop a satisfactory chemical method. It was found that the bromine derivative of resorcinol, monobromoresorcinol, gave an intense blue colour with very small amounts of zinc. The techniques required for separating zinc from other metallic ions, which also react with this reagent, are now being investigated.

Considerable interest in the fluoride content of foods has been created by the evidence that this element is effective in decreasing the incidence of dental caries. Therefore, an investigation was undertaken to develop a more satisfactory method for determining fluorine in food. It was found that the fluoride ion will bleach the pink colour of a ferric salicylate solution and that the decrease in colour is proportional to the fluoride present. Some interferences were encountered when this method was applied to certain food products, and this phase of the problem is now under study.

The polyoxyethylene emulsifying agents, which are added to foods to improve their texture and keeping quality, can be precipitated by compounds such as phosphomolybdic acid. A method for the determination of these compounds has been developed based on the weight of the precipitate obtained. However, this procedure is time-consuming, and significant errors can result from the precipitation of substances other than polyoxyethylene derivatives. A colorimetric method based on the determination of the molybdenum in the precipitate has been successfully applied to the analysis of bread samples.

Microbiology Section

Laboratory studies to determine preferred methods for rapid determination of the sanitary bacteriology of food factories have been completed and their accuracy established for recovery of five "indicator" bacterial species from six types of factory surfaces.

A survey of the antibiotic resistance of staphylococci and streptococci in market cheese has established that this product may well serve as one source of human infections with strains of these two genera that are resistant to penicillin and dihydrostreptomycin even though the patients have never received antibiotic therapy. This condition seems to stem from the widespread use of these antibiotics among dairy cattle.

The specific toxin-producing potentialities of pathogenic staphylococci from hospital sources and from market cheese have been shown to be similar. Comparative determinations have been made to establish the correlation between the indicator tests for pathogenic staphylococci, viz., the presence of the coagulase and phosphatase enzymes, the production of hemolysins, dermonecrotic and lethal toxins, and enterotoxin (food poisoning). The reliability of the phosphatase indicator test appears to have been over-emphasized in the past.

Heterologous antigenicity of enterotoxins from different strains of staphylococci has been established. The dependability of the cat test for enterotoxin has received further confirmation; critical values for the concentration of *B*-hemolysin that could cause an emetic reaction in cats have been established; a method for the selective inactivation of *B*-lysin with ascorbic acid prior to testing for enterotoxin has been developed. Analy-

sis of different strains of staphylococci, of "purified" toxins, and various cellular fractions are being made by infra-red spectroscopy.

The microbial species aetiologically associated with the middle-ear disease of laboratory rats have been shown to be *Pasteurella multocida*, *Streptobacillus moniliformis*, *Diplococcus pneumoniae*, *Micrococcus pyogenes* and "diphtheroids". Neither therapy with multiple antibiotics nor the use of polybacterins have been dependably successful in control of the disease.

Micro-organisms that produced anticolon form antibiotics have been isolated from the intestine of a rat that had an atypical intestinal flora.

A contribution to the Civil Defence training program was made through lectures at the Arnprior Civil Defence College and written submissions on "Civil Defence: (1) Measures for the safe handling of foods (2) Foods as a vehicle for disease in bacterial warfare (3) Hazards from radio-activity in foods".

The personnel of the Microbiology Section has given lectures and practical training to the members of Inspection Services on the assessment of the sanitary conditions of food processing and storage plants. It has taken part in a number of provincial conferences on factory and food sanitation to assure mutual assistance and understanding of the interests of provincial and federal departments.

A review, "Foods and Feeds from Fungi", has been prepared and published in the Annual Review of Microbiology.

The following papers accepted for publication include a series of three on staphylococcal toxins, "Middle-ear disease of Rats", "Microbiological Standards for Foods: their function and limitations", "Botulism and Methyl-alcohol Poisoning", "The Content in Cheese of Extraneous Matter and Bacteria of Public Health Significance", and "The Resistance of Staphylococci and Streptococci Isolated from Cheese to Seven Antibiotics".

Vitamin and Nutrition Laboratory

During the past year a survey was made to ascertain the potency of representative multivitamin preparations available in Canada. Three capsules, four tablets and three liquids were examined. Several samples of each product were purchased from druggists in Ottawa and Montreal and analyzed for vitamin content. The analysis indicated that vitamin A, vitamin B¹², thiamine and pantothenic acid were particularly unstable in certain mixtures. Riboflavin, niacinamide and pyridoxine were much less affected by storage conditions. It was found that more than one-third of the 80 samples procured were more than one year old and that at this age the potency of some of the vitamins in the products had begun to drop significantly.

To obtain conclusive information on the shelf age of vitamin products, a comprehensive survey was carried out in 21 centres from Victoria, B.C., to St. John's, Nfld. The lot numbers of all multivitamin products of six of the larger Canadian manufacturers were listed from samples on the shelves of at least three drugstores at each location. The survey indicated that about 50 per cent of the samples were more than one year old. About 25 per cent. were more than two years old. Twenty of the 6,000 samples listed were more than 10 years old.

These studies indicated the need for still more effective analytical control in addition to more effective merchandising practices. The use of an expiration date was suggested for such products to ensure that they would not remain on drugstore shelves for an excessively long time and that the consumer would obtain full labelled potency.

Continued study has been given to the effect of thiamine in lowering the response to vitamin B¹² in the assay using *Escherichia coli* 113-3. Thiamine is destroyed and the

effect removed when sodium *meta*-bisulphite extraction is employed prior to assay. The *E. coli* procedure is much simpler to handle than the *L. leichmannii* assay and has been found to give equally accurate results and is recommended for use where interfering materials are absent, as is the case in many pharmaceuticals. The effect of thiamine on the response to vitamin B¹² is evidently not related to destruction of the latter but rather is a direct one on the metabolism of the *E. coli* organism. Advantage has been taken of this finding to study the role of vitamin B¹² and related substances in metabolism.

Microbiological procedures for the estimation of pantothenic acid and panthenol have been studied. As a result of a collaborative assay all regional laboratories are now in a position to carry out pantothenic acid assays.

Studies of the effect of aureomycin on the vaginal smear assay for vitamin A have been continued. In this assay the "sparing" effect on vitamin A amounts to about 25 per cent. Aureomycin also increases weight and age at depletion and survival time but does not appear to increase liver storage. The effect of aureomycin does not seem to be exerted on the absorption of the dose of vitamin A. It is influenced by the source of carbohydrate in the diet. Aureomycin also has a positive effect on both calcification and growth in the vitamin D rat assay.

Continued studies on the utilization of iron in flour by anemic rats have shown that high levels of calcium in the form of phosphate, lactate, carbonate and chloride retard hemoglobin formation, particularly at low levels of iron. At the levels used phosphorus, in the form of sodium salts, had no effect. The amounts of calcium permitted in enriched flour had no effect on the hemoglobin levels of normal rats. Data on the composition of the livers of the rats are being compiled and studied.

Collaborative studies with the National Research Council on the nutritive value of fats indicate that fat mixtures having a composition similar to that of the body fat of rats produces better growth than other mixtures. These studies are being continued.

Cosmetics, Colours and Alcoholic Beverages Section

The use of artificial colours in foods and the suitability or otherwise of certain colours for such use has been attracting the attention of regulatory bodies in many countries. Much of the time of this Section has been taken up with studies of various aspects of this subject. New methods of separation and analysis have been devised and papers dealing with these have been published. All imports of colours from Europe have been examined and only colours meeting the requirements of the Act have been admitted and certified.

The activities of the alcoholic beverages section have included the investigation of the chemistry and determination of the small amount of cyanide sometimes found in wine, the determination of the extremely minute amount of methanol that seems to be present in almost all samples of ethanol, and a review of the composition of Scotch whiskies on the Canadian market.

Apart from collaborative studies of methods of analysis with the United States Food and Drug Administration, there has been little activity in cosmetics this year. Practically no complaints of irritation from the use of cosmetics have been received.

Pharmacology and Toxicology Section

Chronic toxicity studies of a number of food colours and smoke flavours are continuing. Recently, studies on Oil Yellow OB and AB were completed and a paper on this work has been prepared for publication.

The second chronic toxicity trial in rats of four chemicals used or proposed for use in bread, in which the chemicals were added directly to the ration, generally confirmed the previous trial, in which the additives were baked into bread and the bread added to the ration. The results of both experiments have been published.

Polyvinylpyrrolidone was studied for its ability to enable excretion by the kidney of materials not normally excreted by this route (the so-called embathic effect). These studies indicated that polyvinylpyrrolidone does exert some embathic effect.

Studies on the drug retardant action of a pectin derivative thus far have not been particularly encouraging.

Preliminary investigations of assay procedures for the proteolytic enzymes, trypsin and chymotrypsin, have been made with a view to developing assay methods of improved precision and specificity.

Detailed analyses of 21 different lots of dextran plasma expander from eight companies have been largely completed, and specifications for use by government departments in the purchase of dextran and polyvinylpyrrolidone have been drawn up. Official methods for use in conjunction with these specifications have been established.

Investigations were continued during the year on animal tests for detecting agranulocytosis-producing drugs. These studies were carried out in rabbits. On the doses used, aminopyrine (a well-known agranulocytosis-producing drug) increased the granulocyte count in the blood and caused a slight hyperplasia of the bone marrow as shown with hemacytometrical procedures and desoxyribonucleic acid determinations. However, in rabbits treated with aminopyrine and myleran definite reduction in the granulocyte count and significant hypoplasia of the bone marrow were observed. These findings would seem to explain the low incidence of agranulocytosis among the users of aminopyrine. In other words, agranulocytosis occurs probably only in patients with bone marrow rendered susceptible to aminopyrine by some toxic agents having an action similar to myleran. Such a "double insult" approach may also be useful in detecting in animals the agranulocytosis-producing property of other drugs. Its usefulness is being explored.

Commercial epinephrine hydrochloride solutions were assayed for their bronchodilator and vasopressor activities, and three lots had lower bronchodilator activity than the standard, indicating the presence of norepinephrine in these lots.

A survey of digitoxin tablets available in Canada was carried out using the official method of assay and a new chemical method to be included in the U.S.P. XV. Results showed that two of 18 products failed to meet present requirements. The new U.S.P. XV method is more stringent and would exclude 11 of the 18 samples on the basis of low digitoxin content. It was found to be an accurate method for the determination of digitoxin provided a modification in the extraction procedure was applied.

A survey of Rauwolfia Whole Root products sold in Canada was completed. A standard for each brand and a method based on the hypotensive response in roosters were used to carry out the survey. All brands were found to be uniformly potent from one lot to another, but the potency between brands is suspected of being variable.

Further study was given to the rat blood pressure method for the assay of vasoressin. This work was carried out in co-operation with the Committee on Physiological Testing of the American Pharmaceutical Association. Further studies are needed to determine among other things which anaesthetic is the most suitable and how it is best administered to insure prolonged uniform anaesthesia.

Assistance was given the Pharmaceutical Chemistry Section in an investigation of methods for the detection of particles in ampouled solutions.

Physiology and Hormones Section

A method involving the thyroidal uptake of radio-active iodine by weanling rats was employed in the collaborative assay of the proposed International Thyrotrophin

Standard. The potency obtained by this procedure agreed closely with that assigned to the new standard as a result of the collaborative effort.

Further work on the assay of corticotrophin by the thymus involution method has been undertaken, and attempts have been made to correlate the thymolytic activity of hydrocortisone with that of corticotrophin in the weanling rat.

A bioassay for adrenal cortical hormones employing thymus atrophy as the response has been published. This method was used in a survey of pharmaceutical adrenal corticoid preparations consisting of tablets, ointments, lotions and extracts. The thymus involuting activity of the following corticosteroids has been determined relative to hydrocortisone: hydrocortisone acetate, hydrocortisone-t-butyl acetate, cortisone, cortisone acetate, corticosterone, 17-hydroxy-11-deoxycorticosterone 11-deoxycorticosterone, and adrenosterone. In this series, it was found that both an alpha ketol group at carbon 17 and an oxygen atom at carbon 11 of the steroid nucleus were necessary for the production of thymus atrophy. A hydroxyl group at carbons 11 and 17 enhanced the thymolytic action of the corticosteroids. The synthetic compounds, prednisone and 9-alpha fluorohydrocortisone, were also investigated and found to be very much more potent than the naturally occurring adrenal cortical hormones. The steroid components of an adrenal cortical extract have been separated and identified by means of paper chromatography using a toluene-propylene glycol solvent system, and the amount of steroid in each spot on the chromatogram is being studied.

The detection of estrogenic substances in poultry has been investigated extensively. A qualitative test for the presence of plasmalogen in the body fat of estrogenized chickens and turkeys has been developed and used in a comprehensive survey of both domestic and imported poultry. The procedure was employed on fresh and frozen specimens. The method was tested collaboratively in the regional laboratories and found to be reliable and practical for detecting poultry treated with estrogenic substances. The plasmalogen test was consistently negative in capons, in untreated males, and in hens which were not in egg production. The epidermal fat of poultry which gave a positive plasmalogen test was extracted and assayed biologically using the increase in the uterine weight of the 21-day old female rat as the response. This method is able to detect as little as 0.015 microgram of either diethylstilbestrol or hexestrol, and 0.3 microgram of estrone. An excellent correlation was observed between the positive plasmalogen tests and a significant increase in the uterine weight of the weanling rats after administration of the extract of epidermal fat. Other phases of this problem are under investigation such as the water and fat content of the muscle and skin of chickens given diethylstilbestrol, the physiological mechanism involved in the production of plasmalogen by estrogens, and the detection of phospholipids in the body fat of the treated birds.

Experiments with castrated hypophysectomized male rats have demonstrated that diethylstilbestrol stimulates the accessory sex organs when the testes are present but has no effect when the gonads are absent.

Identification tests for various steroid compounds were investigated for both the International and the United States Pharmacopoeias.

The bioassay of insulin by the mouse convulsion method received further study. The logistic function was found to provide an estimate of the relative potency and its standard error which was in all cases almost identical with that obtained with probits. A collaborative assay is under way to establish the potency of the proposed Fourth International Insulin Standard.

Additional toxicity tests in mice have shown the toxin in lyophilized scallop liver extract to be stable for at least three years when kept dry and cold.

Pharmaceutical Chemistry Section

In view of the importance of non-aqueous techniques for the assay of drugs and commercial pharmaceutical preparations, considerable time was devoted to the development and application of assays based on the principles of non-aqueous titrimetry.

Continuing from last year, a method for determining codeine phosphate in combination with acetylsalicylic acid, phenacetin and caffeine was developed. In conjunction with this a market survey showed that in almost every instance the codeine phosphate content of these tablets met labelled claim. Publication of the procedure has aroused considerable interest.

The studies on ox bile and the bile acids have led to the development of a non-aqueous procedure that has been applied successfully to the determination of cholic, desoxycholic and dehydrocholic acids. Some market samples were assayed in conjunction with this work, and all were satisfactory.

In addition to the foregoing, two projects concerned with non-aqueous solvents were completed. The first dealt with the purification of certain solvents by use of ion exchange resins and has been published, and the second showed the behavior of a number of organic bases in nitromethane. This work has been accepted for publication.

A study of the stability of oily sprays was undertaken. It was demonstrated that the products showed no change in potency over a 15-month period when N.F. storage requirements were complied with. The purity of the starting materials was an important factor, and considerable work was done on several brands of light liquid paraffin to determine the desirable characteristics of a suitable oil.

A satisfactory method for the zinc oxide content of calamine lotion was developed which has been found satisfactory to the regional laboratories. The procedure has been published in the scientific literature.

Studies on the disintegration of enteric coated tablets were published showing that 60 per cent. of those tested did not meet the definition of an enteric coated tablet. In addition, the disintegration times of further samples of compressed and sugar-coated tablets were investigated.

Collaborative work for the British Pharmacopoeia Commission, the Revision Committee of the United States Pharmacopoeia and the World Health Organization, as well as other agencies, has been conducted at various times throughout the year.

Of 65 pharmaceuticals analysed for enforcement purposes, 54 were satisfactory and 11 unsatisfactory; 26 samples were analyzed for the Department of National Defence, the Department of Veterans Affairs, the Ontario College of Pharmacy or because of consumer complaints. Technical information was provided for four successful prosecutions.

Organic Chemistry Section

Narcotic and barbiturate drugs have been studied intensively by means of infra-red, ultra-violet and x-ray diffraction methods. Physical-chemical data for more than 100 narcotic compounds have been collected by the laboratory and published by United Nations. Chemical characterization and infra-red studies of the pyridine-copper sulfate-barbiturate complexes of clinically important drugs have been completed and published.

Opium ash has been analysed spectrographically by the Food Chemistry Section and, using the flame photometer, the overall composition in terms of percentages of the elements and anions was determined. Criteria have been obtained from this data which, correlated with the country of origin of the opium, have enabled the determination of origin of a number of seizures and of unknowns. This work was reported by one of

the members of the section to the Commission on Narcotic Drugs at United Nations and has led to the adoption by the Commission of a resolution recommending the application of the methods on an international scale. This step has been taken largely on the basis of the work done in Canada.

Electrophoresis has been applied as a method for the analysis of opium and blood serum protein. This work was done in collaboration with the Physiology and Hormone Section.

Photomicrography of a large number of opium samples was undertaken, and an atlas of pictures has been compiled for publication.

Identification tests for the new synthetic analgesics are being investigated.

Cannabis sativa, L. has been studied and a spectrophotometric method of analysis devised for the analysis of the resinous, narcotic principle by means of ultraviolet absorption of cannabinoids.

Biometrics Section

The functions of this section are to devise statistical methods for sampling foods and drugs, to prepare mathematical designs for biological tests and analyse results of such tests, to evaluate the reliability or significance of results of clinical trials or tests for effectiveness and safety of drugs and treatments, to assist the scientific staff of the Directorate in matters requiring a knowledge of mathematics and statistical theory.

Since it has not been possible to obtain a replacement for the statistician heading this section, who left in 1953, the work of the section has been curtailed. However, assistance, for which the Directorate is deeply grateful, has been obtained from the Biometrics Section of the Division of Applied Biology of the National Research Council in dealing with some of the more urgent problems. Other problems have had to be passed over until a qualified biometrician can be obtained.

Animal Pathology Section

Over 6,600 sections of tissue were examined during the year. The tissues were principally from animals on feeding trials of food colours, bread additives, agranulocytosis-producing drugs and curing substances from meats. Several specimens obtained from canned foods and meat products and suspected of containing parasites or foreign material of animal origin were sectioned and identified microscopically.

A method for the histochemical staining of plasmalogen in frozen sections of fat is under investigation.

A method was developed for the X-ray diagnosis of middle-ear disease in rats by which a colony free of middle-ear disease is being bred. In collaboration with the Microbiology Section, the age of infection and the types of infecting organisms were determined. The efficacy of antibiotics used alone and in combination in combatting middle-ear disease was also determined.

In collaboration with the Occupational Health Laboratory an investigation into the nature of an apparently inherited nervous disorder in rats is being carried out.

Infectious diseases encountered in the animal colony were controlled with minimal losses. A program of preventative vaccination against canine distemper and feline panleukopenia has kept these diseases under control in the colony.

TABLE 1
 (Food and Drug Directorate,
 DRUGS EXAMINED

From: April 1, 1954 to March 31, 1955

Laboratory	Domestic			Imports		
	Samples	Adulterated	Misbranded	Shipments	Adulterated	Misbranded
Halifax.....	107	.....	4	56	.....	62
Montreal.....	233	38	56	70	.....	285
Ottawa.....	392	65	78	10	.....	.....
Toronto.....	307	16	94	656	7	552
Winnipeg.....	64	23	13	857	4	537
Vancouver.....	761	33	64	262	445	20
Totals.....	1,864	175	309	395	7,613	31
						1,550
						1,685

TABLE 2
(Food and Drug Directorate)
EXAMINATION OF DOMESTIC FOODS
From: April 1, 1954 to March 31, 1955

	LABORATORIES						Adult-erated	Mis-branded	Other Infrac-tions	Totals
	Halifax	Mont-real	Ottawa	Toronto	Win-nipeg	Van-couver				
Alimentary Pastes.....				6	8	1	3	1	.....	15
Baking Powder, Leavening Agents or Chemicals.....	10				1	.....	.....	.....	1	11
Bakery Products—Cakes, Pastry.....	5	.....	129	160	4	3	17	13	2	301
Beverage & Beverage Concentrates.....	16	217	47	84	46	57	45	61	14	467
Bread, Flour & Cereals.....	159	111	27	90	13	92	21	92	138	492
Breakfast Foods.....			1	4	.....	.....	1	1	.....	5
Confectionery.....	5	.....	16	139	15	6	19	15	3	181
Dairy Products.....	359	7178	93	216	354	178	535	18	648	8378
Dessert Powders & Mixes.....			42	71	19	38	22	61	1	170
Eggs & Egg Products.....				2	.....	3	.....	.....	.....	5
Fish & Fish Products.....	119	8	15	18	9	48	18	11	17	217
Food Colours & Flavours.....	122	40	35	1	20	33	45	13	85	251
Foods, Oriental.....	9	.....	.....	.....	.....	1	1	.....	9	10
Fruits, Fresh.....	57	.....	5	.....	5	1	3	3	3	68
Fruits, Canned.....	27	.....	7	398	10	64	6	.....	.....	506
Fruits, Dried.....	61	.....	1	4	17	.....	11	2	.....	83
Fruits, Glazed or Candied.....				.....	.....	4	3	.....	.....	4
Gelatin.....	3	.....	4	.....	.....	.....	.....	.....	3	7
Honey & Honey Products.....	11	.....			1	1	.....	2	3	13
Jams & Jellies.....		3	65	271	7	3	102	8	1	349
Juice & Syrups.....	198	29	11	5	16	97	5	58	12	356
Lard & Shortening.....	1	.....	1	5	.....	.....	.....	2	1	7
Liquors, Distilled & Fermented.....	81	2	3	4	1	10	.....	.....	36	101
Meat & Meat Products.....	148	416	99	239	362	346	184	28	81	1610
Nuts.....	1	.....	3	2	12	.....	9	.....	1	18
Oils.....	7	.....	5	1	.....	.....	.....	2	.....	13
Pickles.....	1	2	7	.....	4	.....	8	2	1	14
Preservatives.....				.....	.....	.....	.....	.....	.....	.....
Salad Dressings, Sandwich Spreads & Other Condiments..	3	3	8	13	8	33	2	14	3	68
Soup & Soup Mixes.....	2	.....	6	7	4	.....	1	2	.....	19
Spices.....	35	1	6	180	82	96	27	4	14	400
Sugar & Substitutes.....	1	.....	3	1	2	2	1	.....	.....	9
Sweeteners, Artificial.....			2	.....	.....	28	2	2	.....	30
Syrups & Molasses.....	29	.....	1	1	1	2	6	.....	2	34
Vegetables, Canned.....	4	1	5	520	20	91	15	12	4	641
Vegetables, Dried and Frozen.....	3	.....		3	3	5	7	.....	.....	14
Vegetables, Fresh.....			2	4	8	10	6	.....	.....	24
Vinegar.....	8	.....		20	1	19	1	7	.....	48
Water.....	3	.....				18	.....	.....	.....	21
Miscellaneous.....	8	.....	16	5	13	50	1	7	.....	92
Dairy Products (Dairy Division).....				525	.....	.....	378	.....	.....	525
Grand Totals.....	1,496	8,011	665	2,999	1,066	1,340	1,505	441	1,083	15,577

TABLE 3
(Food and Drug Directorate)
EXAMINATION OF IMPORTED FOODS
From: April 1, 1954 to March 31, 1955

	LABORATORIES						Adult- erated	Mis- branded	Other Infrac- tions	Totals
	Hali- fax	Mont- real	Ot- tawa	To- ronto	Win- nipeg	Van- couver				
Alimentary Pastes.....		1				3				4
Baking Powder, Leavening										
Agents or Chemicals.....	4				1			1	1	5
Bakery Products—Cakes, Pastry.	62	4		10	31	16	15	22	11	123
Beverage & Beverage Concentrates.....	75	4		23	67	64	6	39	11	233
Bread, Flour & Cereals.....	9	5	3	16	4	17	13	16	3	54
Breakfast Foods.....				1				1	1	1
Confectionery.....	276	86		111	201	218	24	110	57	892
Dairy Products.....	40	2		58	13	51	12	62	26	164
Dessert Powders & Mixes.....	3			43	26	34	18	52	2	106
Eggs & Egg Products.....						1		1		1
Fish & Fish Products.....	39			555	141	202	106	26	40	937
Food Colours & Flavours.....	18			6	36	15	2	36	3	75
Foods, Oriental.....	11								5	11
Fruits, Fresh.....	4	3		1						8
Fruits, Canned.....	22	1		36		13	2	4	8	72
Fruits, Dried.....	1,905	837		134	866	531	150	8	1,065	4,273
Fruits, Glazed or Candied.....						3				3
Gelatin.....				19		19	22			38
Honey & Honey Products.....	2					13		2		15
Jams & Jellies.....				1	6	120	5	8		127
Juice & Syrups.....	13				5	78	1	23	1	96
Lard & Shortening.....	1			7			1	1		8
Liquors, Distilled & Fermented..	2					1				3
Meat & Meat Products.....	206			32		148	10	1	15	386
Nuts.....	1,075	2,619		82	1,260	722	20	3	167	5,758
Oils.....	7	59		5	2	4	2	5	2	77
Pickles.....	5			1	19	1		3		26
Preservatives.....										
Salad Dressings, Sandwich Spreads & Other Condiments..	10			2	6	23	3	5		41
Soups and Soup Mixes.....	3			1		7	1	2	3	11
Spices.....	165	468		32	126	111	13	13	65	902
Sugar and Substitutes.....	22			1			7			23
Sweeteners, Artificial.....	4			1				1		5
Syrups and Molasses.....	119	54		2	2	5		7	1	182
Vegetables, Canned.....				2		7	2	2		9
Vegetables, Dried and Frozen..	43			7	9			7	10	59
Vegetables, Fresh.....				1	1					2
Vinegar.....	5	46		1		6	1	5	3	58
Water.....		1		1				1		2
Miscellaneous.....	63			10	28	11	11	29	46	112
Grand Totals.....	4,213	4,190	3	1,202	2,850	2,444	447	496	1,546	14,902

NARCOTIC CONTROL DIVISION

Pharmaceutical firms authorized to manufacture and distribute narcotic products in Canada extended close co-operation to the Department in ensuring that adequate supplies of narcotic medication were maintained during the year. No difficulties were experienced when attempting to provide sufficient medication of a narcotic nature for the medical needs of this country. This satisfactory situation, of course, could not have been achieved without assistance from the countries from which the material was obtained. The United Nations Narcotic Commission also played an important part in providing the necessary machinery of control covering the movement of drugs between countries.

On the recommendation of the World Health Organization, a decision was reached to cease issuing licences permitting heroin to be imported into Canada subsequent to January 1, 1955. This policy has also been followed by a great many countries which are members of the United Nations. In fact, at the present time only a very limited number of countries still allow this opiate to be available because of its marked and potential addiction properties. It is estimated that some heroin supplies will continue to be accessible to the medical profession in Canada during 1955, but after the quantities of the drug presently on hand are exhausted, there will be no further material allowed to enter the country.

Another development during the year was the bringing into force of amendments to the Opium and Narcotic Drug Act and the Regulations made thereunder. Two important amendments were made, with minor consequential changes automatically being required. To assist enforcement officers in a fight to stamp out illicit activities in drugs, an amendment to the Act created the offences of trafficking in drugs or being in possession for the purpose of trafficking. The maximum penalty for either of these offences is 14 years' imprisonment. The other important amendment to the Act made provision under the Regulations for pharmacists to be permitted to dispense certain types of medication having a narcotic content in combination with other medicinal ingredients on the strength of a verbal order issued by a physician. Previously, a prescription signed and dated by the attending physician of the patient was required before a pharmacist could legally release narcotic medication. This stringent requirement caused some hardships on patients, physicians and pharmacists, and some measure of relief was needed. From a control standpoint, no difficulties are anticipated as a result of allowing certain innocuous preparations with a small narcotic content, such as cough mixtures and mild oral analgesics, to be dispensed on a verbal prescription issued by a physician.

The staff of the Division spent considerable time reviewing available records relative to known addicted persons. Several hundred files were scrutinized, and the installation of a new system was completed providing a more accurate and complete method of tabulating information about the number of addicted persons known to the Department. Additionally, other valuable information about their background and activities will be incorporated in this system. The results already accruing from this work indicate conclusively that the problem of addiction is not necessarily a major one, nor has there been any noticeable increase in the number of addicts.

As in the past, heroin was the drug involved in the great majority of narcotic cases where a conviction was registered. During the calendar year 1954, 340 convictions were recorded and 323 involved heroin. This material was undoubtedly smuggled into Canada and originated in countries where national control is not necessarily of a high standard.

Control of the Legal Domestic Trade

As previously stated, licensed distributors in Canada, of whom there were 155 in the year under review, ensured that adequate supplies of drugs were kept on hand at all times. A total of 138 licences to import were issued by the Department. The chief sources of supply were Great Britain, the United States, India and The Netherlands. Additionally, 55 licenses permitting export of narcotic material were granted to licensed dealers. The chief destination of export were Bermuda and British Guiana.

Each licensed dealer was required to submit monthly reports of sales. All such sales were checked and recorded on individual purchase cards which are maintained for every physician, pharmacist, veterinary surgeon, dentist and hospital entitled to purchase drugs. Over 34,000 cards are maintained, and more than 135,000 entries were made on these cards.

Three pharmacist auditors checked records, stock on hand and security measures at the premises of 140 licensed dealers. Moreover, approximately 900 hospitals were inspected by auditors who also conducted 75 interviews of a confidential nature.

Estimated consumption of narcotic drugs, as well as the amounts of material imported, are outlined in Tables 6 and 7 appended.

Control of Retail Pharmacies

Normally, three narcotic sales reports, each covering a four-month period, are received from retail pharmacists across Canada each year and are carefully checked. Activities in this field, however, were somewhat curtailed during the year to permit the installation of a completely new system of indexing known addicts. The forced lull in the regular review of the sales reports program has produced abundant evidence of the importance and value of this work. It is now known that there has been some increase in the number of cases where large doses of narcotics had been routinely prescribed which might not have developed if an early enquiry had been made into the circumstances necessitating the prescribing of the medication. The routine of scrutinizing these reports has now returned to normal, and the Division is again receiving and processing nearly 1,000 reports monthly from pharmacists. The program will automatically permit a close scrutiny of the quantities of narcotic medication being prescribed by physicians and dispensed by pharmacists.

All registrars and other members of various pharmaceutical and medical associations across Canada extended the closest co-operation in keeping the Department informed concerning additions to and deletions from the lists of registered members.

During the year, the Division was visited by several persons from other countries who are in some way connected with narcotic control work. These visitors, without exception, expressed considerable interest in Canada's methods of control over the distribution of narcotic supplies.

Convictions

In the calendar year 1954 there was a slight drop in the number of narcotic convictions recorded, the total being 340 as compared with 402 during the judicial year ending September 30, 1953. From October 1 to December 31, 1953, an additional 99 convictions were registered. For purposes of uniformity, however, statistics of narcotic convictions will, in the future, be compiled on a calendar year basis rather than a judicial year, as was the practice in the past.

Of the 340 convictions during the calendar year 1954, 296 were for illegal possession, 22 for illegal sale, two for obtaining prescriptions from more than one physician, seven were for trafficking and 13 for possession for the purpose of trafficking. These

latter two types of convictions were possible as a result of the amendments to the Opium and Narcotic Drug Act, and the sentences imposed upon those convicted of the offences were lengthy, ranging in the majority of cases from seven to 14 years. The drugs involved in the successful cases were as follows: Heroin 324; Morphine 8; Demerol 3; Marihuana 3; Methadone 2.

One citizen of Switzerland and eight American citizens were involved, the remainder being Canadians. Sentences awarded were as follows:

Fine only	2
6 months to less than 2 years	176
2 years and less than 5 years	115
5 years and less than 7 years	28
7 years and less than 14 years	19

A summary of conviction statistics appears in Table 4 which follows.

International Co-operation

All information and reports required by the United Nations Narcotic Commission regarding narcotic control were submitted routinely. Additionally, 50 reports covering major narcotic cases were also prepared and forwarded to the Commission for transmission to other countries.

TABLE 4
(Narcotic Control Division)

CONVICTIONS UNDER THE OPIUM AND NARCOTIC DRUG ACT FOR THE CALENDAR YEAR 1954

PROVINCE	NATURE OF OFFENCE					DRUGS INVOLVED					
	Illegal possession	Illegal sale	Obtaining Rx's from more than one physician	Trafficking	Possession for the purpose of trafficking	Heroin	Morphine	Marijuana	Demerol	Methadone	Total
Newfoundland.....											..
Prince Edward Island.....											..
Nova Scotia.....	1					1					1
New Brunswick.....											..
Quebec.....	25	3	1	6	..	35	33	..	1	1	35
Ontario.....	65	11	..	1	3	80	73	4	1	2	80
Manitoba.....	7	..				7	7				7
Saskatchewan.....	4	..				4	3				4
Alberta.....	18	2	..			1	21	18	3		21
British Columbia.....	176	6	..	1	..	9	192	189	1	1	192
TOTALS.....	296	22	2	7	13	340	324	8	3	2	340

Additional penal sections included in Opium and Narcotic Drug Act Effective June 19, 1954.

TABLE 5
(Narcotic Control Division)
CONVICTIONS UNDER THE OPIUM AND NARCOTIC DRUG ACT FOR THE PERIOD
SEPTEMBER 30, 1953 TO DECEMBER 31, 1953

PROVINCE	NATURE OF OFFENCE			DRUGS INVOLVED					
	Possession of Drugs	Selling Offering Giving Away and Delivery	Totals	Opium	Poppy Heads	Metha-done	Mari-huana	Morphine	Totals
Newfoundland.....									
Prince Edward Island.....									
Nova Scotia.....									
New Brunswick.....									
Quebec.....	3		3	1				2	3
Ontario.....	28	1	29			2		23	29
Manitoba.....	6		6				5		1
Saskatchewan.....	2		2				2		6
Alberta.....	3		3				2		2
British Columbia.....	52	4	56				55		56
TOTALS.....	94	5	99	1	3	2	87	2	99

TABLE 6
 (Narcotic Control Division)
 IMPORTS OF MAIN NARCOTICS
 FOR PERIOD 1945-1955 INCLUSIVE
 Unit of Weight — Ounce, Pure Drug.

Year	Raw Opium	Medicinal Opium and Preps.	Mor-phine	Heroin	Cocaine	Ethyl Mor-phine	Dilau-dide	Papav-erine	Codeine	Pholco-deine	Pethi-dine	Dro-moran	Nisentil	Metha-done
1945.....	4,000	3,842	4,791	762	361	1,195	19	571	23,122	2,085	.....	.....	.....	.....
1946.....	4,000	4,614	1,181	1,020	1,797	664	23	805	35,885	5,539	.....	.....	.....	.....
1947.....	3,360	6,458	1,046	906	2,169	745	18	961	36,915	9,018	.....	.....	.....	.....
1948.....	3,200	3,040	3,013	1,019	993	919	26	2,809	34,058	5,175	.....	.....	.....	892
1949.....	1,720	3,202	3,168	906	666	1,433	11	943	37,751	4,106	.....	.....	.....	1,068
1950.....	1,609	4,000	2,337	748	1,344	1,207	21	1,292	93,269	5,480	.....	.....	.....	92
1951.....	1,928	4,423	3,076	1,014	1,053	1,098	17	1,672	37,274	9,189	.....	.....	.....	73
1952.....	53	5,200	1,173	991	1,122	1,403	15	1,518	58,098	12,343	.....	.....	.....	329
1953.....	1,744	3,768	2,760	819	1,750	1,108	13	1,540	40,682	21	11,409†	28	93	208†
1954.....	208	5,280	2,134	832	1,704	1,389	7	2,996	99,273	627	20,884	20	56	324

† Pure Drug figure utilized in 1953.

TABLE 7
(Narcotic Control Division)
ESTIMATED CONSUMPTION OF THE MAIN NARCOTICS
FOR THE PERIOD 1945-1954 INCLUSIVE

Unit of Weight — Ounce, Pure Drug.

Year	Raw Opium	Medicinal Opium and Preps.	Mor-phine	Heroin	Cocaine	Ethyl Mor-phine	Dilau-dide	Papav-erine	Codeine	Pethi-dine	Phol-Codeine	Metha-done and Preps.	Levor-phane	Nisentil
1945.....	3,175	6,314	3,351	570	1,305	691	12	381	22,809	1,102	.....	.....	.....	.....
1946.....	3,422	4,797	3,492	1,058	1,552	1,110	22	455	36,191	2,045	.....	.....	.....	.....
1947.....	3,932	4,734	3,090	881	1,390	1,107	15	715	36,484	5,894	.....	.....	.....	.....
1948.....	2,090	6,026	3,074	995	1,407	1,032	22	1,416	39,672	5,642	.....	.....	.....	.....
1949.....	2,010	3,606	2,718	898	1,197	949	16	1,359	44,443	6,852	.....	.....	.....	.....
1950.....	2,330	5,375	2,613	1,000	1,408	1,103	16	1,632	45,582	7,270	.....	.....	.....	.....
1951.....	2,020	5,693	2,525	928	1,270	1,561	15	1,362	56,384	8,916	.....	.....	454	.....
1952.....	2,045	5,925	2,539	776	1,340	775	20	2,046	63,345	10,087	.....	.....	388	29
1953.....	762	5,036	2,692	828	1,412	1,582	21	1,691	53,199	10,512*	8	312*	34*	29
1954.....	1,819	5,574	2,470	992	1,171	593	3	2,608	64,187	11,828	200	383	13	111

* First use of Pure Drug figure as authorized on UNNC Annual Statistical forms for 1953.

HEALTH SERVICES

CONSULTANT SERVICES

BLINDNESS CONTROL DIVISION

The Division carried on its educational program for the preservation of vision by pamphlets, articles, radio scripts and motion pictures. Interest was continued in remedial treatment of suitable recipients of blindness allowance, in eye research, in glaucoma clinics and to a limited extent in the problems of the deaf. In connection with the Blind Persons Act, eye examinations were supervised, eye reports filed and blindness certificates issued to provincial authorities.

Eye Research

The Division fostered eye research through the National Health Grants program. Projects concerning eye diseases of virus etiology, glaucoma, keratitis and panophthalmitis continued at the University of Toronto. Also under the Grants Program, glaucoma research is under way in Montreal and Quebec City.

Treatment Scheme

The treatment scheme, initiated by the Division in 1949 and designed to restore sight to suitable blind pensioners, was put on a permanent basis in February, 1952. Agreement has been reached with nine provinces to participate. The treatment is given locally and the Federal Government re-imburses the provinces for 75% of the cost of approved treatment.

Up to March 31, 1954, vision was restored in 104 out of 149 cases treated. In the year ending March 31, 1955, 53 more cases were treated with 44 successes. The total is 202 cases treated with 148 successes (73%)-mostly by cataract extraction.

Only a small proportion of recipients of blindness allowance whose sight might be restored actually apply for treatment.

The cost of treating the 53 cases in the last fiscal year was \$22,110.38, of which \$16,582.89 was reimbursed to the provinces concerned. The cost of each case approximates the blindness allowance of one person for one year. Thus, considerable savings are achieved. More important is the resultant restoration of vision to the persons concerned.

Glaucoma

This condition causes more blindness than any other eye disease. It can occur at any age, but is more common after 40. Its prevalence is increasing partly because more persons are living longer.

Four glaucoma clinics have been established for needy persons under the National Health Grants program. One is in Toronto, two are in Montreal and one in Quebec City. A fifth clinic has been approved for Saint John, N.B., and is expected to be operating early in the next fiscal year.

Legislation

An amendment to the Blind Persons Act to lower the age limit of eligibility from 21 to 18 years is now before Parliament. If this bill is adopted, the change will affect several hundred young blind persons.

Of the 20,506 known blind in Canada, 8,122 are in receipt of blindness allowance under the Blind Persons Act. Some 3,000 persons formerly on blindness allowance have been transferred to Old Age Security pension on reaching age 70.

Hearing

The Division, in co-operation with the Information Services Division, issued an educational pamphlet entitled "Ear Trouble" dealing with the causes, treatment and prevention of deafness in children.

CHILD AND MATERNAL HEALTH DIVISION

For most of the period under review the activities of the Division were carried on by Dr. Jean F. Webb whose appointment as Chief of the Division was confirmed early in the year. In March, 1955, Miss Esther J. Robertson joined the staff as nursing consultant. This appointment will result in a renewal of nursing consultant services to hospitals and their extension into the field of public health nursing. A close liaison will be maintained with national and provincial nursing organizations as well as graduate schools of nursing.

The Division continues to have as its objective the promotion of optimum health for the mothers and children of Canada. It functions in an advisory way in several areas to fulfil this objective.

1. Assistance is given on request to the Health Grants Administration in the review and assessment of health grant projects for services to mothers and children.
2. Assistance and advice are made available to provincial health departments in the assessment of present facilities and services and in planning for extension of services in this field.
3. Educational materials to be used by both the general public and by professional individuals and groups are prepared.
4. Research is conducted and stimulated on health problems peculiar to mothers and children.

Health Grants

Improvements and extensions of maternal and child health services have been stimulated by the funds of the Child and Maternal Health Grant. The Division has continued to be consulted frequently by the Health Grants Administration regarding the utilization of these funds. In the year under review one province established a division of maternal and child health, with a physician and a nursing consultant. A pediatrician was employed, part-time, by another province to study the problem and make recommendations to the department of health. A third province employed a consultant in nursing to develop further this field of public health services. Other expenditures were for equipment especially for newborn care, training of personnel, and a number of service projects.

During the year another well-organized study of still-births and neonatal deaths was set up along lines similar to the one already in operation. Other research projects in the field of maternal and child care were carried on. The Division was also consulted regarding projects for the utilization of the Crippled Children's Grant, the General Public Health Grant, Professional Training Grant, and the Public Health Research Grant.

Consultation to Provinces

All provinces but one were visited by the Chief of the Division during the year. Discussions took place with provincial health authorities as well as with physicians and

hospital personnel interested in these problems. Particular emphasis was placed on the terms of reference of the Child and Maternal Health Grant and the opportunities for its utilization. The nursing consultant visited three university schools of nursing to establish contact and discuss future co-operation.

Educational Materials

Preparation of educational materials, in co-operation with Information Services, continued to be a major interest of the Division. The "Nursing Manual on Premature Care" was released for distribution, and its reception was so favourable that a reprint was required during the fiscal year.

A pamphlet on "Rheumatic Fever in Children" was prepared and will be available soon.

A filmstrip, "How to Protect Baby from Infection", has been completed, and will be ready soon.

Two posters for use in child health conferences and prenatal clinics have been produced.

There has been a continuing heavy demand for the revised edition of "The Canadian Mother and Child" and for other materials.

Research

A paper on another phase of the study of staphylococcal infections of mothers and newborns has been accepted for publication by the Journal of the Canadian Medical Association. Other publications will be forthcoming.

Other Activities

The Chief of the Division assumed responsibility for directing a panel discussion on "Maternal and Newborn Care" at the May meeting of the Dominion Council of Health. Participants were representatives of university departments of obstetrics and paediatrics and of the Canadian Nurses' Association.

Contact has been maintained with the national and provincial medical associations. A paper, "Infections of the Newborn", was given at the annual meeting of the Ontario Medical Association. Material on "The National Health Program for Mothers and Children" was presented at a panel discussion of the annual meeting of the Canadian Paediatric Society.

There was an opportunity during the fiscal year to spend several weeks in the United States visiting the health departments of Connecticut, Maryland and New York City, as well as the Children's Bureau in Washington. Particular attention was given to programs for the care of newborn infants and handicapped children. It was of interest to note the increasing involvement of departments of health in both the development of recommended standards for maternity and newborn care and their implementation.

Indices of Progress

Reductions in maternal and infant mortality rates are widely recognized as valuable reflections of general progress in maternal and child care. The salvage of maternal and infant lives is the first objective in all maternal and child health programs but should not be regarded as the sole objective.

Maternal Mortality—In 1953 there were 324 deaths of mothers in Canada. This represents a rate of 0.8 per 1,000 live births—the lowest national rate ever achieved. Ten

years ago, in 1943, there were 831 deaths in nine provinces—a rate of 2.8 per 1,000 live births.

In 1953 the major causes of maternal deaths were:—

	Number	Percent
Toxaemia	95	29
Haemorrhage	90	28
Sepsis	67	21
Disproportion	27	8
Other causes	45	14
Total	324	100

With the decreasing maternal mortality rate, our concern becomes less with mortality than with maternal morbidity. Although there are no accurate statistics on this problem, the association between maternal morbidity and complications in the newborn infant is well recognized. Continued improvement in services to mothers will be reflected in a reduction in stillbirths and neonatal deaths. There are two necessary steps in the improvement of these services. One is to improve facilities for maternity care, especially in rural areas, and the other is to ensure that the mothers requiring care avail themselves of it. This requires the combined efforts of physicians, hospitals and public health workers.

Infant Mortality—In 1953 there were 416,827 live births in Canada—the birthrate being 28.2 per 1,000 population. There were 14,764 infants who died in their first year—a rate of 35 per 1,000 live births. The rate ten years ago was 55. There has obviously been considerable improvement which has been world-wide. Canada, however, has cause for concern since many other countries with no higher standard of living save more infant lives. In 1953, 12 countries had rates under 35, and eight of these were under 30.

The major causes of death in the first year of life were:—

	Number	% of Total Infant Deaths
Lower respiratory infections	2,550	17
Immaturity	2,243	15
Congenital malformations	2,161	15
Birth injury	1,420	10
Asphyxia and atelectasis	1,316	9
Gastro-intestinal infections	985	6
Ill-defined diseases	1,160	8
Other causes	2,929	20
Total	14,764	100

Respiratory infections remain the leading cause of death in infancy, while other infections contribute materially to the total. As the infant mortality rate decreases, deaths in the first month of life account for an increasingly larger proportion. In 1953, 8,895 infants died in the first month of life. The nature of the neonatal mortality problem is further emphasized by the fact that 75% of newborn deaths occur in the first week of life. Since more than 80% of births now take place in hospitals, the responsibility for a reduction in neonatal deaths must be shared by the hospitals and the physicians providing care as well as by departments of health.

DENTAL HEALTH

The prevalence of dental caries, periodontal disease and malocclusion in Canada can as yet be estimated only in general terms. The development and use of standardized epidemiologic methods for a better assessment of these conditions is progressing, with the help of the universities and the Canadian Dental Association. In the meantime, con-

servative estimates of the magnitude of the problem of caring for oral ill health, available from the Canadian Sickness Survey and from a recent survey made by the Canadian Dental Association, show that its economic implications in health program planning are highly important. The amount of money paid directly by the public to physicians for medical treatment (exclusive of expenditures for prepayment plans) is only about 2½ times the amount paid directly to dentists for dental treatment. The Canadian Dental Association estimates that the overall annual cost of dental care in Canada is well in excess of \$70,000,000 and that less than one-quarter of the total need for dental care is being met by the 5,000 practising dentists. These findings are supported by the work of this Division in the fields of oral epidemiology and dental economics. Although the total picture remains to be clarified in its details, enough information has now been revealed to lead this Division to direct its efforts almost entirely to the encouragement of prevention and to early systematic dental care of children as the only sound approach to good oral health in the future.

Health Grants

The General Public Health Grant is the main source of health grant aid for dental programs in the provinces. Provincial departments of health are advised to utilize this grant to set up dental health divisions, where they do not already exist, and to place them under the direction of public health trained dentists. Eight of the provinces now have such divisions, headed by dentists who have obtained their professional training in public health with the aid of the Professional Training Grant. The existence of these provincial dental divisions is an important factor in directing the use of monies from the General Public Health Grant to dental health education in the schools and in local health units, and to early systematic treatment of the pre-school and lower-grade elementary school children. In this connection, the gradually increasing use of the Professional Training Grant to train dental hygienists is bringing into the public health field a valuable dental ancillary whose work is directed to the use of preventive measures among children.

Although the emphasis in the development of dental programs has been on the care of young children, the grants have also been used to improve dental facilities in sanitaria and mental hospitals.

Research and Surveys

This Division, with the help of the Research Division, has now proven, beyond any reason for doubt, that the adjustment of the fluoride content of a low-fluoride, or fluoride-free, water supply to a level of one part per million of fluoride will reduce the incidence of tooth decay by about 65%. The analysis of the findings from the 1954 survey showed that the children of Brantford, who were born subsequent to the beginning of fluoridation there, had the same reduced caries attack rate as the children of Stratford where the water supply has contained fluoride in excess of one part per million for the past 38 years. No ill effects were observed in either of these places, either by the survey team from this Division or by the local practising dentists and physicians.

It is worth noting that the statistical design and the general planning of this study of water fluoridation, involving the cities of Brantford, Sarnia and Stratford and more than 5,000 children, has drawn favorable comments from universities and health authorities in various parts of the world. To meet the requests for information about the methods used the two divisions concerned have published a monograph entitled "A Suggested Methodology For Fluoridation Surveys In Canada".

In addition to the water fluoridation study, the Division, again with the help of the Research Division and also with help from the Food and Drug Directorate, is conducting two other studies in the field of prevention. One of them involves the use of the topical application of stannous fluoride to prevent tooth decay; the other is aimed at simplifying topical application methods.

During the year the Division assisted the Nutrition Division in a survey at Cape Sable Island, N.S., obtaining information on the health of the teeth and gums of both adults and children there.

Education and Information Services

More than 50% of tooth decay can be prevented by brushing the teeth or rinsing the mouth immediately after eating. A further important reduction can be obtained by the intelligent, moderate use of sweet foods. There is a close demonstrable relationship between oral cleanliness and disease of the gums. This, and a few additional simple items of information, if carried into use by the public, would reduce the need for professional dental care to a small fraction of what is now required. Therefore, this Division is actively concerned with disseminating such information among the public, and more particularly to the children, in simple, attractive, understandable forms—and to indicating where the major responsibility lies in the preservation of oral health. In this work the staff of the Information Services Division has rendered helpful service. An encouragingly large demand continues for dental health folders, posters, films, filmstrips and teaching aids.

Other Activities

Some of the interests and activities of the Dental Health Division require the assistance of other divisions, and vice versa. This applies more particularly to Indian Health Services, the National Health Grants Administration, the Food and Drug Directorate, the Nutrition, Child and Maternal Health, Mental Health and Occupational Health divisions. Useful exchanges of help and advice have furthered the interests of the divisions concerned and of the Department as a whole.

Close liaison is maintained with the Canadian Dental Association on all public health matters of mutual concern and interest. The head of the Division attends in an advisory capacity at meetings of the Public Health Committee and Health Insurance Studies Committee of this professional organization.

HOSPITAL DESIGN

Since the inception of the Hospital Construction Grant in 1948 more than \$69,400,000 has been allocated toward the construction of space for more than 54,700 patient beds of all types, and more than 6,500 bassinets and 8,500 nurses' beds have also been approved for grants. In addition to those given on a bed basis, grants have also been approved for community health centre facilities, which include such areas in hospitals as out-patient departments, radiology, laboratories, emergency, pharmacy, dispensary, physiotherapy and remedial therapy. Grants are also provided for training facilities. Grants for these services are determined on a floor area basis, which entails a detailed study of the number of square feet in each area.

The problem of approval becomes more complicated yearly as hospitals often return three or four times for additional grants, and it is necessary to review the complete developments to ensure that a duplication of assistance does not occur.

Prior to a request for grant assistance, many provincial health authorities, and others, forward proposals in the preliminary stage for consultation on planning problems. This Division was originally set up to provide this service, but the time consumed by the grant program prohibits full advantage of this service being available to hospitals. However, during the year, the Division has provided consultation to many hospitals, large and small, of various types throughout Canada, and also to the Armed Forces medical services, Northern Affairs and Indian Health Services. Continued research and study of hospital planning is essential to maintain a high standard of service.

A detailed study for alterations and additions to the Bermuda Mental Hospital was made at the request of the Bermuda Health Department. Preliminary studies have been made for the Laboratory of Hygiene of this Department and for a proposed hospital at Whitehorse for Indian Health Services.

During the past two years a member of this Division completed studies in hospital organization and management and obtained a Certificate of Hospital Administration from the Canadian Hospital Association.

The Chief of the Division is chairman of a committee set up by the Canadian Standards Association on hazards in hospital areas where explosive gases are used. During the past year he gave papers at the Alberta Hospital Association and lectures to the School of Hospital Administrators in Toronto and London, Ont.

MENTAL HEALTH DIVISION

The Mental Health Division promotes mental health programs and provides educational materials of all types for the provinces. It co-operates with the provinces in their efforts to benefit mental hospital patients and to develop community mental health services. The Division is particularly concerned with the preventive aspects of mental health through public education in the importance of early treatment and in the proper direction to child training. Since many of the provinces are not equipped to undertake the specialized job of public education through the production of booklets, films, etc., this Division has undertaken this task and co-operates with the provinces in developing a balanced mental health program for this country.

Mental Health Grant

The Mental Health Grant continues as a major factor in the progress of mental health services in Canada. Through this grant a steady stream of key mental health personnel is being made available throughout the country, as facilities are being increased and expanded to deal with mental illness in its early stages. Progress in research is being pushed through annual federal grants amounting to approximately \$500,000 annually. Community mental health services are being strengthened and expanded, with emphasis being placed upon mental health and child guidance clinics as well as psychiatric out-patient departments and wards in general hospitals as "first line defences" against one of Canada's greatest public health problems. As in the past, voluntary mental health organizations are also receiving support under the mental health grant.

During the year under review 289 projects were supported by the mental health grant. A total of \$6,635,947 was allocated as follows:—mental health divisions \$181,177; mental hospitals \$3,673,778; psychiatric services in general hospitals \$803,476; mental health clinics \$739,545; training programs \$203,944; bursaries \$467,050; and research \$566,974.

Consultant Services

For Immigration Medical Services the Division reviews cases where a psychiatric condition is present or suspected in connection with an immigrant's application for admission to Canada and with a sick mariner's hospitalization. The Division collaborates with Information Services Division in the production of mental health education materials; with Civil Defence as a consultant to the Civil Defence Health Planning Committee; with Narcotic Control Division in cases in which it is suspected that narcotics have been abused for an alleged medical condition; with Hospital Design Division concerning the details of design of mental hospitals, schools for mental defectives and psychiatric units in general hospitals; with the Dominion Bureau of Statistics on the national system of reporting mental health statistics.

Public Education

The Division continues to publish the monthly newsletter "Canada's Mental Health" which is a medium to disseminate professional and technical information to provincial mental health divisions, mental institutions of all types, university faculties of psychiatry, psychology and social work, and key persons working in the voluntary mental health field. Three new folders were added to the child training series bringing the total number of these publications to 20. The latest three are "Jealousy", "Sleeping Habits" and "Parent Education".

Special surveys conducted by Divisional personnel resulted in the publication of four brochures: "Mental Health Services for Courts, Penal and Reform Institutions in Canada"; "School Mental Health Services in Canada"; "Community Mental Health Services in Canada"; "Services for the Care and Training of Mentally Defective Persons in Canada." The 207-page book "Mental Health Services in Canada" produced by the Department's Research Division was done in co-operation with the Mental Health Division. During the fiscal year 1954-55, a total of 1,012,310 pieces of literature were distributed. Of this number, 832,685 were in English and 179,625 in French.

A film interpreting Canadian mental health services to the general public was completed during the year. It is titled "To Serve the Mind" and describes in dramatic form services available for the treatment of mental illness. Two filmstrips were produced dealing with the subjects of "Fear" and "Destructiveness." Four posters on mental health subjects for general use have been printed.

Fifth International Congress on Mental Health

The Fifth International Congress on Mental Health met in August in Toronto and was attended by more than 2,000 delegates representing over 30 countries. The Department gave financial support to this historic gathering, and the Mental Health Division had an outstanding display to show the progress that Canada has made in the field of mental health, particularly under the impetus of the National Health Program. The Hon. Paul Martin addressed the opening session of the Congress, and the chief of the Division and staff took an active part in the conferences and workshops.

Drug Addiction

The problems of addiction to narcotics and the control of narcotic supplies continue to be of considerable concern to the Department. Since mental health is one aspect of the problem, this Division maintains close co-operation with the Division of Narcotic Control. The Chief of the Mental Health Division gave testimony before the Special Committee on the Traffic in Narcotic Drugs in Canada.

Advisory Committee on Mental Health

The Advisory Committee on Mental Health met in Ottawa February 28 and heard reports of the subcommittees on research, statistics, training, and public education.

Research—The subcommittee on research met once during the year. Close liaison is maintained with the National Research Council, the Defence Research Board and privately-endowed foundations and universities so that a balanced program of research in this field may be maintained. Some 42 projects costing approximately \$459,000 were recommended by this subcommittee.

Statistics—The Division works in close co-operation with the institutions' section of the Dominion Bureau of Statistics. Major changes have been made in the 1953 report of Mental Health Statistics and further changes are under study. Finances are now being omitted from the main body of the report, various cross classifications have been eliminated and generally the report is being kept as non-technical as possible. The first edition

of the new Mental Statistics Handbook has been well received, and a second edition of 2,000 copies has been prepared. Canadian statistics on mental illness continue to be the most up-to-date, extensive and reliable among those produced in the world today. National statistics on mental illness are available within the year of collection, and hence are of current value to those working in this field.

Public Education—This subcommittee is concerned with educating the public so that they will better understand and participate in mental health activities. The subcommittee has been actively concerned with a variety of problems during the past year and met three times, twice in Toronto and once in Montreal. The following problems have been given special consideration—(1) Public Attitudes to Mental Illness and Mental Health; (2) Changes in Practice Study; (3) Content of Material Used for Purposes of Public Education; (4) A Mental Health Manual; (5) Effectiveness of Media of Communication.

Training—The lack of sufficient numbers of trained personnel—psychiatrists, psychologists, psychiatric nurses, psychiatric social workers, occupational therapists—continues to be one of the basic problems to be solved in the implementation of any national mental health program. The aims of this Subcommittee are: (1) To improve the standards of nursing care in Canada's mental hospitals; (2) to set minimum standards of training for nursing personnel in mental hospitals throughout Canada; (3) to further congenial working relationships between nursing personnel and Canadian mental hospitals and other branches of nursing. The Advisory Committee on Mental Health has recommended that a survey of needs in terms of personnel vacancies be made by this Department. This is in respect to needs for psychologists, psychiatrists, social workers and other disciplines.

NUTRITION DIVISION

The Division continued to work toward the maintenance and improvement of health in Canada by providing technical services to federal and provincial agencies. A second nutrition survey was carried out in a Nova Scotia community to determine changes in food habits and health since the first survey in 1949, during which time an intensive program of nutrition education had been carried out. Consultant dietitians visited Indian hospitals, nursing stations and residential schools to give advice for the improvement of food service. In co-operation with the Civil Service Health Division, a survey and educational program to promote better breakfast habits among civil servants in Ottawa is being carried out. First results of the Canadian Weight-Height Survey were printed. The Director has continued to provide technical nutritional advice to numerous government departments, to individuals and at meetings.

Research and Surveys

The Nova Scotia survey on Cape Sable Island was carried out in co-operation with the provincial health department. Following the earlier survey in 1949, provincial nutritionists instituted an educational program based on the survey findings. The 1954 survey revealed appreciable improvement in the health of the group studied.

Investigation was continued of the possible harmful effects of bone meal in flour on hemoglobin formation. This study, which began in 1949, will be concluded in 1955.

Publication of a physician's card of "Canadian Average Weights for Height, Age and Sex" marked the culmination of a national height-weight survey and provided Canada with what is believed to be the first such table to be representative of a country. The final report is now being prepared.

Preliminary work is underway for two nutrition surveys to be carried out in New Brunswick. One study will be in an area with considerable blindness.

Follow-up work was continued among members of the large family group which has been studied for several years in regard to the relationship between nutrition and

Leber's optic atrophy. Four other family groups with histories of hereditary optic atrophy were investigated, and family trees to the fifth and sixth generations were drawn. Study of the pattern of transmission of the disease is being continued.

Consultant Services

Other Divisions: Civil Defence (Welfare Planning) received help with two courses for instructors of emergency feeding at the Canadian Civil Defence College, Arnprior, and with the serving of meals for large groups on other occasions. Assistance in preparation of educational filmstrips was provided and the "Technical Manual on Emergency Feeding", previously prepared in this division, became available this year. A dietitian from the Division was consulted regarding equipment and staff for the mess at Arnprior.

At the request of Indian Health Services, 16 hospitals and 10 nursing stations received direct assistance with their food service. Advice was given on menus for immigration halls.

In co-operation with the Civil Service Health Division, a Better Breakfast project was started among Ottawa civil servants. A survey of breakfast habits, being carried out building by building by the nursing counsellors, reveals that many workers do not eat a breakfast satisfactory for health. Efforts are being made to improve the situation by education. The project is still in progress.

During the year nursing counsellors referred 15 civil servants to the Nutrition Division for examination and advice on nutrition problems.

The Research Division, in the preparation of a statement for the International Labor Organization concerning the health requirements of industrial workers, received help on questions dealing with feeding.

Other Departments: Assistance was given the Department of Transport in setting up rations for seamen and for personnel in isolated stations. For the Indian Affairs Branch of the Department of Citizenship and Immigration, advice was given on the food service in two Indian residential schools. The Division also gave advice on plans and equipment for the cafeteria in a new government building.

Provinces: During the year one province was assisted in setting up space and equipment standards for school lunchrooms. Requests for advice on kitchen layouts are often received by referral from provincial health departments. During 1954-55 advice was given on the following layouts—two general hospitals, a School for the Deaf, a hospital for mental defectives, a home for chronic illness and an agricultural residential school. Provincial nutritionists were given assistance with a variety of specific problems.

Other Agencies: In July, 1955, more than 10,000 boys will be under canvas at the International Boy Scout Jamboree which is being held in Canada for the first time. The Canadian Boy Scouts Association received advice on food supplies and feeding practices for this Jamboree.

Nutrition information to be included in publications by several commercial agencies was checked for accuracy. Numerous requests for information were received from professional and lay people.

Education and Information

Educational materials were produced in co-operation with Information Services for use by provincial health personnel in accordance with their expressed needs. Of more than 900,000 items distributed through these channels, the majority were reprints or revisions of items of proven educational value. New publications included a poster on a "Good Breakfast"; a booklet "What is Nutrition?" for use with the filmstrip of the same name; the French edition of "A Dietary Standard for Canada" (Canadian Bulletin

on Nutrition, Vol. 3, No. 2); and a pocket card, "Canadian Average Weights for Height, Age and Sex." The basic nutrition booklet, "Healthful Eating", was rewritten.

"Canadian Nutrition Notes" was published monthly for professional people, and regular publication of other periodicals was continued.

For the third successive year a nutrition photograph contest was sponsored. The 63 entries, more than in the previous year, showed greater variety of subject and improved presentation of theme, thus indicating that these contests were achieving their objective by increasing interest in nutrition.

Laboratory Service

In addition to carrying out routine micro-analyses on blood and urine samples in connection with nutrition surveys, the facilities of the Nutrition Laboratory are available to physicians, through provincial laboratories, for the estimation of vitamin A, carotene, ascorbic acid and protein in properly collected and shipped blood samples. Simplified procedures for collection and shipment have been devised and, as a result, it has been possible to give this service wider publicity. Interest arising out of this publicity indicates an expansion of laboratory activity during the coming year.

Advisory Committee

The Dominion-Provincial Nutrition Committee this year met with its parent body, the Canadian Council on Nutrition. Nutritionists working with other agencies were invited to attend some of the sessions.

ENVIRONMENTAL HEALTH & SPECIAL PROJECTS

MEDICAL REHABILITATION AND DISABILITY ADVISORY SERVICE

The Medical Rehabilitation and Disability Advisory Service was established this year under the supervision of the Principal Medical Officer for Environmental Health and Special Projects. This Service, which consists of a medical consultant, a medical social work consultant and a technical consultant, is intended to provide advisory and consultative rehabilitation services and in the medical areas of the disability allowances programs.

In rehabilitation the Service is a consultant to other branches of the department, particularly the National Health Grants administration. All projects submitted under the Medical Rehabilitation Grant are reviewed, and recommendations are made in each case. The Service also provides liaison with other departments of the government which carry non-medical responsibilities in rehabilitation. Close contact is maintained with the National Advisory Committee on the Rehabilitation of Disabled Persons on which the Principal Medical Officer acts as departmental representative. The Service also provides technical advice and guidance to other governments and to voluntary agencies.

In the field of disability, the Service provides guidance to medical evaluation boards established to advise provincial authorities administering disability allowances programs. In this connection, the Service published the "Disability Evaluation Manual" in which procedures are described, legal definitions are interpreted, types of acceptable medical evidence are explained and guide forms drawn up. This manual is being used extensively in provincial programs.

Through the appointment in the provinces of Medical Review Boards, working in collaboration with federal medical representatives under the general supervision of the Service, it is hoped to achieve a standard interpretation of disability in all provinces.

In setting up one joint advisory service for both medical rehabilitation and disability evaluation, the principle of maintaining the closest tie-in between the two programs has been emphasized.

OCCUPATIONAL HEALTH DIVISION

The promotion of sound health practices in all industries and occupations throughout Canada is the overall objective of the Occupational Health Division. Towards this end, the Division consists of three groups; laboratory services; clinical—both medical and nursing—consultant services; and radiation services.

The Division acts as an advisor and consultant on all matters of occupational health, providing assistance and advice, on request, to other federal departments, provincial health departments, certain crown companies, commercial and industrial enterprises, and others. Many of the problems and surveys involve all services of the Division.

Clinical and Health Education Services

On request, medical and nursing consultant assistance was provided for a wide variety of occupational health problems during the year.

Medical—The following are a few examples of the studies and surveys which medical officers of the Division assisted either as supervisors or participants: an investigation of mercury hazards in seed-testing laboratories; a study of the problem of noise at an R.C.A.F. station; and an investigation of the river pollution problem at Edmonton, Alberta.

The Chief of the Division continued to act on the Windsor-Detroit Air Pollution Study, and one of the clinical consultants, as a member of the National Health Pesticide Committee, devoted considerable attention to the study of pesticide health hazards, a constant and growing concern.

Two new studies were initiated during the year, one of which concerns the provision of health services for small plants and the other an investigation of the problem of back injuries in heavy industry.

An increasing number of inquiries on occupational health problems were dealt with, and clinical advice was given to provincial health departments, industries, local health agencies and many other groups. Examples of such assistance to provincial departments include the provision of information on such diverse matters as dust control in the manufacture of asbestos textiles and the composition of duplicating fluids.

Assistance to various federal departments included advice on the carrying of dry ice in aircraft, recommendations on the use of cyanides in plating processes and information on the coproporphyrin method in the diagnosis of lead poisoning. In co-operation with members of the laboratory staff, members of the clinical services assisted with the preparation and presentation of a lecture course in occupational hygiene to members of the R.C.A.F. and the Canadian Army.

In addition to their other functions, the medical officers also served on various national and international committees.

Nursing—The services of the nursing consultant are planned to function as a part of the total health program of the Department and throughout the year, the consultant continued to provide leadership and assistance in occupational health matters pertaining to nursing.

As a part of her work, the consultant made a trip to Nova Scotia and New Brunswick where she visited all industries employing nursing staffs. She also participated in various institutes, a valuable innovation in occupational health nursing.

Assistance was given to universities and hospital nursing schools in regard to their instruction in occupational health nursing, with a view to increasing the preparation of the professional nurse for employment in occupational health nursing in Canada's industries.

Many requests for information concerning occupational health nursing and other health matters were received from industries and other organizations in the various provinces. In Ontario and Quebec these were dealt with in co-operation with provincial nursing consultants; in the other provinces, where there are as yet no nursing consultants, direct assistance was rendered. As a matter of interest, there has been a general increase in the number of requests for information on the organization of health centres and occupational health nursing programs.

In keeping with the policy of interpreting the role of occupational health nursing to other professional groups, the senior nursing consultant continued active membership on committees of the Canadian Nurses' Association, the American Association of Industrial Nurses, the Professional Institute and on the advisory editorial staff of the publication, "Nursing World."

Educational and Technical Information—Health education is of primary concern to the Occupational Health Division and, in addition to the educational media of press, radio, correspondence, short courses, and the presentation of lectures and papers, the Division, in co-operation with Information Services, contained publication of the following periodicals.

Occupational Health Bulletin—a monthly publication, in both French and English, containing information on health and safety of workers, distributed free to about 22,000 industrial managers, industrial nurses, safety supervisors and other interested groups and individuals.

Occupational Health Review—a semi-annual technical publication, circulated in English and French editions to about 12,000 medical, nursing and technical personnel.

Pesticide Bulletin—a technical publication, dealing with the health hazards of pesticides and current developments in the pesticide field. Distribution is confined chiefly to medical research and technical personnel involved in health aspects of pesticides.

Occupational Health News Letter—a new publication, intended to disseminate information on federal and provincial developments in occupational health.

Reference Manual: Guide to Diagnosis of Occupational Diseases—During the year, there continued to be many requests for this reference manual, both in Canada and from abroad.

Laboratory Services

Certain problems in occupational health require scientific research, investigation and consulting service, in the laboratory or in factory, mine or field. The closest co-operation with the clinical services of the Division exists in the approach to such problems and a number of major cases have been jointly studied on behalf of federal agencies and provincial departments of health during the fiscal year 1954-55.

In the laboratory, research has been pursued on certain new insecticides to develop clinical tests and treatment procedures useful to the medical profession in dealing with cases of ill-effects from such chemicals. The growing problem of urban air pollution has been emphasized by research on both the toxicological and physico-chemical aspects. This area of investigation has been assigned to the Occupational Health Group since a substantial proportion of air pollution is of industrial origin and similar to contamination dealt with by occupational health experts in studying conditions inside the workplace.

Demand for consulting service by laboratory personnel has reflected the increasingly technical character of the factors influencing the health of Canadian working people. Staff have served on new safety standard committees. Consulting work to the Department of Agriculture in hazard assessment of new pesticidal chemicals has accelerated as the use of such chemicals in Canada has grown. Laboratory specialists have been called upon to serve in the international field on special committees under the World Health Organization and the International Labour Office.

During the year the work of the Laboratory led to a number of publications in scientific and medical journals.

Study of New Pesticidal Chemicals—Substantial progress in study of the effect of such chemicals on the enzyme systems of laboratory animals was made with indication of the possibility of a useful test being developed for clinical assessment of absorption of such chemicals by humans. The discovery in the laboratory of an antagonistic action between two classes of insecticides may open the way to progress in the development of prophylactic and treatment procedures for ill-effects from certain new insecticides. Study of the fundamental nature of specific enzymes has been carried out as a part of the basic approach to this problem. Two publications appeared in the literature from this work. Three publications were prepared on field studies carried out in the previous year.

Arsenic Pollution at Yellowknife—A continuing survey of the levels of arsenic in the Yellowknife environment has been carried on for the fourth year following the discovery that effluents from smelting operations had contaminated the area. This survey revealed a loss in efficiency of one collection system during the year and an indication of a small increase in environmental levels in certain sections.

Hazards of Welding Operations—A special study of environmental and clinical aspects of the hazard of welding operations was carried out on behalf of the Department of National Defence. The special problems of welding in confined spaces, which typify ship repair and construction, were investigated and recommendations made for control of the hazard in this important occupation.

Dust Conditions in Industry—A new and advanced electron microscope was put into service on the problem of improving methods for assessing dust conditions in industry. The scientist in charge of this instrument worked at the French National Research Council in Paris during the early months of the year developing special techniques for identifying very small air-borne dust particles. By the close of the year progress had been made on a technique for identifying, sizing and counting quartz particles which present the major hazard of industrial dust and represent the aetiological agent in silicosis.

Free service to industry and official agencies in analysis of special dusts has been continued.

Air Pollution Research in the Laboratory—Urban air pollution presents a problem of ever-increasing importance in large Canadian cities and industrial centres, and the occurrence of several disasters in which many lives were lost has stressed the growing menace of pollution. Attempts at intelligent control of this problem are hampered by a lack of understanding of the mechanism whereby polluted air exerts its deleterious and sometimes fatal action. Study of the toxicity of air pollutants is being prepared for by construction of an exposure chamber of advanced and unique design in which experimental animals can be used as test subjects. In this chamber synthetic atmospheres of controlled composition can be created. Investigation of the possibility that relatively enormous amounts of toxic gases may be dissolved in droplets or adsorbed on particulates has continued into the second year with further basic data on solubility coefficients and adsorption isotherms obtained.

Investigation of the relationship between naturally-occurring calcite in the air and the formation of gypsum with sulphur gases of combustion origin has established this aspect as common in a series of urban atmospheres examined. This problem will be continued as it represents a further approach to the central problem of air pollution, i.e., the unaccountably high toxicity of polluted atmospheres.

Consulting Service by Laboratory Staff—Laboratory staff have served on a number of Canadian Standards Association committees in connection with development of safety standards related to occupational problems.

A report summarizing the situation as to dust prevention and suppression in mining, tunnelling and quarrying in Canada was prepared for the International Labour Office.

Extensive consulting service on day-to-day occupational health problems encountered by federal agencies and Crown companies has been rendered. In particular the Department of National Defence has been assisted in view of the ever-increasing use of highly technical procedures in defence operations.

The Laboratory has continued to serve on the Expert Committee on Insecticides of the World Health Organization and during the year co-operated (with two leading authorities from the United Kingdom and the United States) in a special publication on protective measures against organic phosphate insecticides.

A working paper on safety features of equipment used in applying insecticides was undertaken at the request of the World Health Organization for the 1955 meeting of the Expert Committee on Insecticides. Advice was also given on the agenda of a special meeting to be held in 1956 on toxicological evaluation of insecticides.

A member of the Laboratory staff acted as Canadian Government delegate to the fourth session of the Chemical Industries Committee, International Labour Office, in Geneva, during February.

National Health Pesticide Committee—The intimate understanding of the action of the new insecticides gained through the Laboratory work on these chemicals has permitted the Division to act as consultants to the Department of Agriculture in connection with the administration of the health section of the Pest Control Products Act under which pesticides are registered in Canada.

Each year new chemicals of widely diversified nature are presented for registration under the Act. To ensure that such chemicals will not constitute a serious hazard to the health of the user, the consumer of treated produce and the personnel who manufacture, formulate and package the chemicals, careful assessment of the potential hazard is made by the National Health Pesticide Committee. Included in the Committee are experts in the toxicological, environmental and clinical fields. A representative of the Food and Drug Directorate is also a member. The Committee is the liaison agency between the two Departments. Each chemical is reviewed in relation to these specialized aspects and in relation to the entomological purposes of the chemical and the application procedures.

During the fiscal year the Committee reviewed 63 cases. Of these 29 were cleared and label precautions finalized. In four cases registration was recommended against. Fifteen cases required that additional health data be obtained from the manufacturer, and 15 cases remained under review at the close of the fiscal year.

The Committee handled 66 consultations from other agencies, including the Canada Department of Agriculture, provincial departments of health and agriculture and the trade during the year. Included in this service was detailed design of a toxicological testing technique for a Canadian manufacturer entering the market with a new product.

Sub-committees studied the special problems of standard label precautions, standard toxicological rating for pesticides and tolerances for pesticides on food.

The Committee held 11 sessions and 20 meetings with the trade and others on special matters.

Radiation Services

The Radiation Section continued its function as advisors to the Atomic Energy Control Board on the health supervision of the use of radioisotopes. In addition, consultant services were maintained on the health aspects of other forms of ionizing radiation, as follows:

Film Monitoring Service: This has expanded to include the new film badge for X-ray workers. Over 1700 radiation workers are now making use of this service.

Surveys: A survey of a Crown-operated uranium mine was conducted in conjunction with the Occupational Health Laboratory, Atomic Energy of Canada, Limited, and the Ontario Mines Accident Prevention Association. Stray radiation surveys were made at several establishments using X-ray diffraction units, and recommendations were made concerning the use of these units. Plans were made for the initiation of a study of the effects of an increase in radiation background. In this regard a physicist of the Section is undergoing special training in methods of measuring the content of radioactivity in the human body.

Training: The second basic radiological training course was given to members of the Public Health Engineering Division and a member of a provincial health department. This course consisted of lectures and practical exercises emphasizing safe methods of using ionizing radiation.

PUBLIC HEALTH ENGINEERING

The activities of the Public Health Engineering Division during the past fiscal year showed increased emphasis on matters of pollution control, the development of a shellfish program for the Province of Quebec, and the investigation of and participation in special projects at the request of various federal and provincial departments of health. The continued growth and industrial expansion so characteristic at present throughout Canada, accompanied by a rapid increase in urban populations, has created public health engineering problems many of which are new and complex. These problems have presented an ever-widening range of opportunity for greater service. This division, with seven district and two sub-district offices located across Canada, has been able to give reasonable attention to its statutory duties and at the same time to provide valuable assistance to other departments of government through consultation and engineering reports on problems of mutual interest in the field of environmental health.

Activities of the Division are directed to those phases of the environment which have a bearing on the health of travellers, the operating personnel of railways, vessels, and aircraft; of visitors to national parks and other federal property, and employees. In addition, the Department is responsible for the enforcement of certain international requirements governing the handling and shipping of shellfish.

Co-operation With Other Federal Agencies

Assistance to other federal departments when advice was sought on problems of sanitation is expanding year by year. The time and attention given to special projects throughout the fiscal year reflects favourably on the growth and service offered in the work of this Division. Participation in the Aklavik and Coppermine relocation surveys involved the examination of possible water sources, analytical field chemical determinations in the field and stream gauging operation. Advice was also sought and recommenda-

tions made on sewage disposal and matters pertaining to sanitation throughout the Yukon and the Northwest Territories. Data was obtained on a continuing research project at Yellowknife to determine the effects of soil temperatures on underground services. This project is a co-operative effort with the National Research Council. Water and sewerage problems for the Department of Transport were studied at Fort Simpson.

Increased attention and assistance was given towards the development of proper operation technique at a large number of sewage disposal treatment plants constructed over the past few years by the Department of National Defence. New plants under construction were also assessed and recommendations made concerning their adequacy. A special survey was requested to evaluate and to determine the degree of sewage treatment required at the Valcartier Military Camp. This involved study of the Jacques Cartier River in relation to the character and volume of waste to be discharged and the ability of the stream to assimilate such waste without causing deterioration in river water quality to the detriment of communities downstream from the point of discharge. Special water problems were investigated for military camps in Nova Scotia. Consultation services were provided in the review of an operators' manual for the development of uniform procedure in the operation of water and sewerage systems of the Department of National Defence.

The extension of services and the construction of water and sewerage systems at Indian residential schools and hospitals has resulted in increased attention given to public health engineering problems at these various projects. In several instances, complete plans were prepared for the construction and installation of sewage treatment systems. In other cases, engineering reports were prepared following field survey studies to facilitate preparation of plans and specifications by the department concerned for the necessary remedial works. Special studies were made at several Indian schools following outbreaks of disease which might be attributed to contaminated water.

Close cooperation was maintained with the National Parks Branch of the Department of Northern Affairs and National Resources on problems of mutual concern. These include surveys of conditions relating to water supplies, sewage and waste disposal, restaurant sanitation and swimming pools. Special investigations were made of the bacteriological condition of the Bow River within Banff National Park; and of the problem of providing adequate facilities for the treatment of sewage waste from proposed buildings at the new Alexander Graham Bell site at Baddeck, Nova Scotia. The latter required special consideration to assure protection of shellfish interests.

International Joint Commission Studies

The Division with representation on various Advisory Boards to the International Joint Commission on Control of Water and Air Pollution participated in conferences held under their auspices. A major portion of the time of the regional office at St. Catharines was devoted to field work involved in special boundary water pollution surveys in the St. Clair and Detroit River areas. These projects included an industrial waste phenol survey, sampling and analytical determinations throughout the St. Clair River, and taste and odour studies of the raw water supplies at the principal municipalities bordering on the St. Clair and Detroit Rivers, using the carbon filter extraction technique. Increased activity in the control of pollution of these waters was due to the concern expressed by the State of Michigan on the effect of industrial waste discharges on sources of municipal water supplies. These wastes are said to contribute to taste and odour disturbances.

Yukon Problems

At the request of the Alaska Territorial Health Department, sanitary conditions at construction camps located in Canada for the Haines-Fairbank Oil Products Pipe Line were examined and reported on. This work also provided an opportunity to render service

in co-operation with the public health department of the Yukon Territorial Government in the examination of water supplies and sewage systems at military camps; and to deal with other public health problems on sanitation enroute along the Alaska highway.

Provincial Co-operation

As in past years the Division participated through committees and health officials in maintaining close co-operation with all provincial agencies on problems relating to environmental health. Continuing contact was maintained with the Alberta health authorities concerning the pollution of the North Saskatchewan River. The alleged contamination of wells at Parent, Que., by drainage or infiltration of surface waters from cinder fill on C.N.R. property was investigated. Conclusions reached showed that the high iron content of the wells was due to natural mineralization of the ground water from marsh areas in the immediate vicinity. Studies and conferences were continued at the request of the Quebec City Health Department and Quebec provincial health authorities into the discharge of laboratory and plant wastes from establishments of the Department of National Defence and Defence Research Board into the St. Charles River.

Shellfish Control

Control of the shellfish industry has required much time and effort in those provinces in which shellfish are produced commercially for export. Initial surveys of all potential producing areas in Newfoundland, Nova Scotia, Prince Edward Island and New Brunswick are nearing completion, and re-surveys of other areas are being carried out to bring available information up-to-date. The control of producing areas in Quebec is now an active issue, and professional assistance has been provided to the province's Ministry of Fisheries and Ministry of Health in carrying out field investigations and in the organization of their control program. In British Columbia the co-operative control program has been continued with the Department of Health and Welfare. The depletion of producing areas and the increasing demand for shellstock is making effective control of the industry more difficult. Although this is essentially a problem of the Department of Fisheries, it is of grave concern to this department due to the tendency of producers to obtain shellfish from areas which have been closed due to pollution. Control of shellfish toxicity has also been of special interest because of the high toxicity levels found in certain producing areas in Quebec. An extensive sampling program undertaken by the province has provided much valuable data. The need for strict control was emphasized by an occurrence of poisoning in the vicinity of Metis Beach which resulted in two deaths and severe symptoms in a party of seven who ate toxic shellfish.

Laboratory Services

Through laboratories established at William Head, B.C., and at St. Catharines, Ont., the Division has been able to provide a service to federal departments for chemical and mineral analyses of water supplies. This service has been favourably received and has been utilized on various occasions by provincial departments of health. A number of fluoride determinations have been made this past year to ascertain the natural content of this substance in various sources of water supply. Numerous requests from the public are received for such information in view of the widespread interest in fluoridation.

The laboratory facilities at St. Catharines continue to be of much value in connection with pollution studies on boundary and other waters and for industrial waste effluent surveys. Specific problems involving chemical analyses for determining corrective measures in water treatment were conducted for various federal departments. Field and laboratory studies of the presence of iron bacteria in water supplies were made to determine effective treatment and control procedures to overcome operating difficulties where this troublesome problem exists.

To facilitate accurate bacteriological evaluation of water supplies the Division purchased an Isopor Water Laboratory which permits the use of MF membrane filter technique in determining the type of bacteria present. With this portable equipment a bacteriological evaluation of a water supply can be secured during the course of the field work. The Isopor Water Laboratory has been successfully used to date in the field during survey work at Parent, Que. It is expected that there will be many opportunities for its useful application in the field of public health, especially in those areas which are so remote and inaccessible that utilization of existing laboratory services is difficult or impossible.

Grants

For the fiscal year 1954-55 more than \$742,270 has been allotted under the National Health Grants program for the support of environmental sanitation services. Of this figure, \$72,415 was for training purposes, \$29,513 for research and \$640,342 for the employment of necessary staff for local health units and city health departments.

Educational Services

A number of technical papers were presented before professional gatherings or conferences by members of the Division. Lectures on water treatment and vessel sanitation were given to student officers at Marine Schools in Quebec. A series of lectures were given to fisheries inspectors in Newfoundland on water supplies for fish plants, waste and offal disposal and on other related sanitation problems. This was done at the special request of the federal Department of Fisheries. The Division participated in a lecture and demonstration program given on food sanitation to emergency food handlers at the Canadian Civil Defence College at Arnprior, Ontario.

The Division continued to publish the monthly news bulletin "Public Health Engineering in Canada" at the request of the Advisory Committee on Public Health Engineering. No new publications were printed during the year owing to the utilization of available funds to reprint certain existing publications such as "Domestic Sewage Disposal", "Rural Waters" and others in both French and English, to meet the heavy demand for such material.

Training Courses

Training for certain division personnel in specific phases of public health engineering was possible on several occasions by taking advantage of short courses at the Robert A. Taft Sanitary Engineering Centre at Cincinnati, the radiation course at Ottawa presented by the Radiation Section of this Department and other industrial conferences. A seminar on industrial wastes problems arranged by the Ontario Department of Health proved to be of much value to the Division both in exchange of technical data and the experience gained in the discussion of treatment methods in dealing with industrial wastes of a complex character.

Field Work Summary

In all 940 sanitary surveys of water supplies, ice supplies (natural and artificial) and shellfish growing areas were conducted. A total of 6,436 water samples, 93 ice samples, 29 sewage effluent samples and 237 milk samples were taken for analysis. Some 1,059 examinations of railway property including stations, restaurants, bunkhouses, mobile work camps, coachyards and oil wastes disposal were made. A total of 106 examinations were made of sewage treatment plants to check their operation. During the year some 255 vessels' water systems were examined for compliance with statutory regulations.

HEALTH INSURANCE STUDIES

Previous reports have pointed out that the term "health insurance" has many meanings. In its narrowest sense, it is a method of paying the cost of medical and hospital care and should properly be referred to as "sickness insurance". In its widest sense, it implies a method of financing a comprehensive health service which would ensure that financial barriers did not interfere with the provision of care and would ensure that facilities are provided in such a way that all people would have adequate health services. Since the introduction of the National Health Grants program, the Department has taken the view that its primary responsibility is to assist in providing an adequate health service, including the training of personnel, research, diagnosis, treatment, prevention and the provision of hospitals and other facilities.

The Division of Health Insurance Studies, with the assistance of the Research Division, has, therefore, continued to study the development of programs which provide medical and hospital care. These studies have been concerned with the provision and distribution of service, the cost of service and various methods of financing and organization. During the past year, the following reports have been prepared and distributed: "Voluntary Medical Care Insurance: A Study of Non-Profit Plans in Canada"; "Canadian Sickness Surveys—Special Compilations 5 and 6."

Work was continued on the proposed publication "Health Services and Resources in Canada" which is based on the health surveys financed through the health grants program and which should be completed during 1955-56. Foreign developments, particularly in Sweden and Australia, have been kept under review, and memoranda are to be issued in the near future.

Additional bulletins from the Sickness Survey, prepared and distributed in co-operation with the Dominion Bureau of Statistics, will also appear during 1955-56.

NATIONAL HEALTH GRANTS

Under the stimulus of federal grants-in-aid, public health services throughout Canada have continued the expansion and development envisaged when the National Health Grants program was inaugurated seven years ago.

Viewed in financial terms, federal expenditures have grown from \$7,660,774 in 1948-49 to \$31,597,426 in 1954-55. The increase over 1953-54 was \$2,413,498; and payments for the seven-year period total \$154,762,907.

From the public health standpoint, the effects of the grants are discernable in greatly increased numbers of people, particularly in rural areas, served by full-time health personnel; improved treatment facilities in mental hospitals, tuberculosis sanatoria and general hospitals; stepped up case-finding for and a steadily falling death rate from tuberculosis; increased services and facilities for the prevention of mental illness and for the short-term treatment of these ailments; a new emphasis on public health research; a steady growth in diagnostic services; more hospital beds; more numerous well-trained public health personnel; and a stimulated interest in the third phase of medical care, rehabilitation.

Development of Health Services

New Grants

During the past year particular attention was paid to the development of the three new grants inaugurated in 1953-54. All 10 provinces and both territories have submitted

projects for utilizing the Child and Maternal Health grant for the improvement of health services for mothers and small children, with the objective of reducing maternal and infant mortality and morbidity. This is a long-term program and may require several years before its results are reflected statistically in a significant reduction in index rates. However, a beginning has been made by carrying on fundamental research in several centres; by encouraging the training of nurses to specialize in maternal and child care; by giving short, refresher courses for nurses and doctors; and by purchasing equipment to improve the care given to mothers at confinement and to newborn infants.

Six provinces have now forwarded plans for the development of medical rehabilitation services. As a shortage of adequately-trained personnel still constitutes the main bottleneck in developing rehabilitation services, considerable attention has been given to training programs. With the assistance of grants, schools for physiotherapists have been set up in Montreal and Edmonton, and training has been financed at other specialized centres for a variety of categories of rehabilitation workers, including physiotherapists, bracemakers, nurses, speech therapists and physicians. Substantial quantities of equipment have been purchased to set up rehabilitation centres or to extend the services of those already in operation. Close co-operation has been maintained with the Welfare Branch of the Department in relation to the development of its program of disability allowances.

Professional Training

During the second year of its operation, eight provinces utilized funds from the Laboratory and Radiological Services grant as a means of improving the quality of medical care by providing diagnostic facilities in areas not already adequately served. As in most other fields, a dearth of well-qualified personnel has prompted almost all provinces to set up courses, with the assistance of grant funds, for the training of laboratory and radiology technicians. In addition, bursaries have been provided for advanced training of bacteriologists, pathologists, radiologists and biochemists. Equipment, both laboratory and x-ray, has been purchased to improve and extend the diagnostic facilities required for the practice of modern, scientific medicine.

The need for training workers in various health specialties is not a new problem but one which was recognized when the grants program was set up in 1948. A special grant of \$500,000 per year (later increased to \$516,300 when Newfoundland entered Confederation) was designated for professional training, and provision was also made for training to be financed from almost all the other grants. To the end of this fiscal year, more than 9,100 persons, chosen by the provinces, have been assisted in obtaining additional training. Substantial sums have also been supplied to expand and develop training facilities for nurses, nurses' assistants, psychiatrists, clinical psychologists, psychiatric nurses and psychiatric social workers.

Nurses' Accommodation

In connection with the training of nurses it should be noted that this year the terms of the Hospital Construction grant were broadened to permit the giving of grants, on the basis of floor areas, for certain facilities used in hospitals' training programs for health and hospital personnel. The hospital construction program has to date assisted with the provision of space for more than 54,700 hospital beds of all types, 6,500 bassinets, 8,500 beds in nurses' residences and for substantial areas for community health centres, combined laboratories and training facilities for nurses. In some areas of the Dominion and in certain categories of accommodation, notably tuberculosis sanatoria, the acute shortage of hospital beds now appears to have been met. In these areas the

problem is now one of keeping pace with growth in population and in replacing obsolescent buildings. This observation does not, however, apply to the country as a whole, nor to certain types of accommodation, specifically mental, chronic and convalescent hospitals.

Research

Another noteworthy feature of the grants program is the attention given to fundamental research, without which no medical or public health program can progress. From a modest beginning in 1948, research has now developed into one of the most important aspects of grants assistance, totalling this year close to \$1,700,000. Studies are being carried out in 13 universities and in a number of hospitals, sanatoria and other research centres. Appraisal of research applications is carried out by special advisory committees working in collaboration with other federal research-sponsoring agencies.

Continued assistance has been given to the provision of staff and modern scientific equipment for sanatoria and to the free distribution of such drugs as streptomycin, P.A.S. and isonicotinic acid hydrazide to patients with tuberculosis. Programs for x-raying all persons admitted to general hospitals have been further extended, and support has been continued for mass x-ray surveys, particularly among persons exposed to the risk of contracting tuberculosis. Toward the end of the fiscal year a special departmental committee was set up to review the tuberculosis control situation in the light of the steadily falling death rate and to recommend changes in approach or emphasis if the facts warrant them.

Cancer Control

Support was continued for a nation-wide cancer control program. As an important part of this combined federal, provincial and local effort, cobalt 60 beam therapy units have now been installed in Vancouver, Edmonton, Saskatoon, Winnipeg, Port Arthur, Windsor, London and Toronto, and arrangements are in process for units for Ottawa, Kingston, St. Boniface, Saint John, N.B., Quebec City, St. John's, Nfld., and for four units in Montreal. Through the National Cancer Institute of Canada and various provincial research bodies, assistance is being given toward fundamental research on possible causes of cancer and methods of control.

It is interesting to note that a piece of Canadian research, undertaken originally in connection with cancer, played a vital role in the development of the Salk anti-polio-myelitis vaccine. Canada's ability to take advantage of Dr. Salk's outstanding contribution to public health—described in detail in the introduction to the Health Branch section of this report—resulted from the close co-operation of provincial and federal health authorities and the ready availability of federal health grants to assist with developing a Canadian source of supply and financing the cost of the vaccine to be supplied free of charge to Canadian children. This co-operative procedure followed the earlier precedents established with ACTH, cortisone and gamma globulin.

Health Units

During the year assistance was given to local health departments and newly-organized health units, thus extending the range of services and increasing the number of people so served.

In mental health emphasis has been on strengthening and expanding community mental health and child guidance clinics to prevent mental illness or reach it in its early stages and on the development of psychiatric wards and psychiatric outpatient depart-

ments in general hospitals to care for short-term mental illnesses and to avoid prolonged hospitalization in mental institutions.

Surveys

All the provincial surveys of health services and facilities have now been received. These have been carefully studied, and a national report based on them is being prepared in collaboration with the Research Division and is expected to be ready for publication shortly.

Data from the 1950-51 Sickness Survey are still being analyzed by the Dominion Bureau of Statistics. Two more bulletins dealing with national estimates of the volume of sickness and of permanent physical disabilities were issued in the current fiscal year. A number of other special compilations of information are to be made from the available data to provide, in total, material for a detailed study of the extent and economic implications of illness in Canada and to guide public health authorities in their program planning.

Provincial Co-operation

Any success achieved by the National Health Grants program has resulted in large measure from the co-operation of provincial health authorities of all ranks. Meetings of the Dominion Council of Health, special regional gatherings and conferences on specific problems have all been utilized to develop this co-operative spirit and to eliminate problems of administration.

Personnel

On October 1, 1954, when Dr. F. W. Jackson, who had directed the National Health Grants program since it began, was appointed Director of Health Services, the responsibilities of the Directorate of Health Insurance Studies were divided. Dr. G. E. Wride, formerly assistant director of Health Insurance Studies, was made a Principal Medical Officer in charge of National Health Grants administration, and health insurance studies *per se* were made the joint responsibility of Dr. C. A. Roberts and the Director of the Research Division, Dr. J. W. Willard.

RESEARCH DEVELOPMENT

MEDICAL RESEARCH

Financial support for medical research carried on both intra-and extramurally during the fiscal year 1954-55 totalled \$2,296,502. The sum of \$548,750 was for the intramural program and \$1,747,752 for extramural grants-in-aid of medical research in universities and other research-performing institutions.

The intramural program encompasses those investigations carried on by the various technical and scientific units of the Department and in general is aimed at devising new or improved methods of performing the service functions of these divisions. It refers particularly to detection and assay work, e.g., that associated with the administration of the Food and Drugs Act and studies of new techniques such as in the control of biological products or the investigation of occupational hazards. Additionally, however, it may be aimed at gaining new knowledge of public health importance or related to urgent national health problems of a nature not ordinarily undertaken by a single province, university or research institution, concerning which the Department may be looked to for leadership and guidance.

Details of estimated allocations for the intramural research program for 1954-55 are presented in Table 8, following. In considering these figures it should be borne in mind that the close and almost inseparable relationship of research to service functions throughout the intramural program makes it difficult to determine as precisely as might be desired the proportion of the cost which can properly be defined as research expenditure. In many instances the research is a by-product of the service function.

The extramural program consists of grants-in-aid of medical research conducted in universities, hospitals and other research institutions from funds provided under the National Health Grants program. This began in 1948 with an initial support of \$100,000 in the Public Health Research Grant on the introduction of the health grants. Each succeeding year this grant was increased by a like amount up to a maximum of slightly over \$500,000, at which level it now stands. Additionally, allocations from other health grants have been utilized in varying amounts in support of medical research centered generally in the field for which the grants are specifically designated.

From the outset, funds devoted to medical research under all grants have increased from a little more than \$100,000 to almost \$1,750,000 for this fiscal year. The specific allocations according to grant and province involved will be seen in Table 9, which follows.

It will be noted that about one-third of the total funds are derived from the Public Health Research Grant with a somewhat larger amount from the grant for mental health. About \$400,000 of the General Public Health Grant have been allocated for research, with lesser amounts in the fields of tuberculosis control, crippling conditions in children and child and maternal health. The allotments from the Cancer Control Grant totalling \$97,000 have been matched by provincial funds and are utilized under the auspices and supervision of the National Cancer Institute for fundamental research in this field.

Generally, under the Public Health Research Grant studies fall into such fields of medicine as bacteriology, virology and immunology, obstetrics and gynaecology, internal medicine and in nutrition, with fundamental research in biochemistry and pharmacology generally related to these fields. Under the General Public Health Grant, the fields of cardiology including cardiac surgery, special senses, principally ophthalmology, hypersensitivity conditions, internal medicine, bacteriology, and epidemiology and bio-statistics, receive major attention.

Mental health projects relate to problems generally centred in the fields of psychology and psychiatry, neurology, and social medicine and genetics. Those supported by other health grants have, in the main, a direct bearing upon the specific area designated by the title of the grant.

TABLE 8
(Research Development)

ALLOCATIONS FOR INTRAMURAL RESEARCH PROGRAMS

Division	Estimated Expenditure
Civil Aviation Medicine	\$ 2,500
Dental Health	15,000
Epidemiology	16,000
Food and Drug Directorate	100,000
Laboratory of Hygiene	261,000
Nutrition	40,000
Occupational Health	114,250
Total	\$548,750

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TABLE 9
(Research Development)

ALLOCATIONS FOR RESEARCH UNDER THE NATIONAL HEALTH PROGRAM BY PROVINCES — 1954-1955

PROVINCE	Crippled Children	Mental Health	Tuberculosis	Public Health Research	General Public Health	Child and Maternal Health	Assistance to National Cancer Institute	Total
Prince Edward Island.....	30,000	.....	27,254	.....	.....	899	899
Nova Scotia.....	6,802	.....	.....	.....	.....	57,254	57,254
New Brunswick.....	155,712	23,040	210,897	108,170	.....	7,500	14,302
Quebec.....	39,090	258,893	57,937	156,464	258,043	36,210	534,029
Ontario.....	2,730	.....	.....	19,978	48,339	41,602	860,368
Manitoba.....	39,244	7,200	.....	30,106	21,144	.....	54,852
Saskatchewan.....	18,745	.....	11,000	95,295
Alberta.....	6,825	6,280	.....	13,105
British Columbia.....	73,869	.....	.....	38,779	.....	.....	112,648
Northwest Territories.....	5,000	.....	.....	5,000
TOTAL.....	\$39,090	\$567,250	\$88,177	\$495,303	\$412,382	\$48,339	\$97,211	\$1,747,752

EPIDEMIOLOGY DIVISION

The interests and functions of the Epidemiology Division can best be expressed by a definition of epidemiology as "that branch of science which has to do with the natural history of disease—its cause, the means by which it spreads and the conditions which favour or hinder its spread, whether it be an infectious process, a disease or a psychological state in a human community".

With the relative decline in the importance of communicable diseases as public health problems in recent years some re-orientation of interest toward the problems of chronic diseases has been possible.

This Division has continued its role as a service division and in addition has participated and assisted in the investigation of specific disease problems.

National Health Grants

Venereal Disease Control—The Division has continued to assist the Principal Medical Officer of the National Health Grants program in administering the Venereal Disease Control Grant. Assistance was given in the development and maintenance of venereal disease control measures at provincial and local levels. Statistical data concerning venereal disease infections have been collected, compiled and analyzed. Revisions of the publications "V.D.—What You Should Know" and "Syphilis and Gonorrhoea" are in progress. Co-operation in the evaluation of treatment, follow-up and laboratory procedures has been maintained with the provinces.

Tuberculosis—Continued assistance to the Principal Medical Officer administering the National Health Grants program in connection with the Tuberculosis Control Grant has been given, in consultation with the executive secretary of the Canadian Tuberculosis Association. National and provincial agencies providing tuberculosis control programs were assisted in their functions.

Consultations

At the request of the Nova Scotia Department of Public Health, an investigation was made into an outbreak of infectious disease, suspected to be smallpox, in Cape Breton Island.

The Poliomyelitis Vaccine Evaluation Center in Ann Arbor, Michigan, was visited and close contact maintained with new developments in the use of poliomyelitis vaccine. This information was made available to departmental and provincial officers.

Surveys

Detroit-Windsor Air Pollution Health Study—This Division had as a major responsibility in 1953-54 the planning, organization and conduct of the Detroit-Windsor Air Pollution Health Study, which continued in the past year. The International Joint Commission's technical advisory board on air pollution problems had previously requested technical assistance from this Division in setting up a joint field study. American participation was also required to determine the effect of air pollution on the health of individuals in the Detroit and Windsor areas. The major field study is now in progress on both sides of the river. Enumerators were employed and trained and are presently visiting some 800 families every two weeks in Windsor, Kingsville, Harrow and Simcoe, while enumerators from the Detroit City Department of Health are visiting some 450 families on the American side of the river. The data for the first 18 months of the study were analyzed and presented to the International Joint Commission at their annual meeting in Washington in April, 1955. It is expected the present phase of the study will be completed by July, 1955.

Brucellosis in Eskimos—With the Indian Health Services and the Laboratory of Hygiene, this Division assisted in the planning of a serological study to investigate the prevalence of brucellosis in Eskimos.

Bulbar Poliomyelitis and Tonsillectomy—This Division took part in the planning and conduct of a study in Manitoba under the direction of the provincial Department of Health to investigate the relationship of bulbar poliomyelitis and tonsillectomy. To assist in the interpretation of these results, this Division completed a study of the tonsillectomized state of 3,000 persons in Windsor, Kingsville, Harrow and Simcoe, Ont.

Evaluation of Influenza Vaccine—This Division, in conjunction with the Laboratory of Hygiene and the Institute of Microbiology, Montreal, assisted in the planning and took an active part in carrying out a study of the effectiveness of influenza vaccine prepared by the Institute in preventing influenza. Approximately 8,000 volunteers in Quebec Province participated in the study.

Miscellaneous Activities

The technical information section has regularly indexed, abstracted and maintained files of medical articles and statistical information obtained from some 50 medical journals and another 50 epidemiological and statistical reports received from various countries and from the World Health Organization.

Approximately a hundred medical enquiries have been answered every month on a variety of subjects such as tuberculosis, cancer, poliomyelitis and many chronic and communicable diseases.

In addition, bibliographies and summaries have been compiled from medical literature, departmental files and from other sources on epidemiological subjects for departmental use and at the request of other departments and scientists in various countries.

Material concerning the standardization of communicable disease reporting and control procedures in Canada was prepared by this Division, at the suggestion of the Dominion Council of Health, as an assistance to the provinces. This was circulated to provincial Departments and was used by one province this year as the basis for their newly-revised regulations.

As a member of the Canadian Influenza Information Center, this Division provided an information service for the collection and dissemination of data concerning epidemic influenza in Canada, the United Kingdom and other countries.

During 1954, arrangements were made to receive weekly telegraphic reports of the incidence of poliomyelitis from all provinces. This information was consolidated and analyzed and a weekly statement was provided to interested agencies in this and other countries.

LABORATORY OF HYGIENE

General

The Laboratory of Hygiene, which is essentially a national public health laboratory, has three major functions: service, research and control. The first two are authorized by the Department of National Health and Welfare Act which states that the Department is authorized to carry out "investigation and research into public health and welfare". The third function is performed by the Laboratory of Hygiene as part of a consultant service to the Director of the Food and Drug Directorate.

Service, as in past years, consisted mainly of the provision of special diagnostic reagents to the provincial public health laboratories, the performance of certain rare or complicated laboratory examinations which could not be performed feasibly in most provincial laboratories and the presentation of short-term training courses in special

fields of public health laboratory work. During recent years, however, the services provided by the Laboratory of Hygiene have been broadening. During the past year, many tests and reagents and considerable technical advice were made available to other Government agencies, such as Indian Health Services, Civil Defence and the Armed Forces. Assistance to the provinces again went beyond the former borders of public health laboratory activities when a survey of public health and laboratory services was carried out in Manitoba, the sixth province to request such a survey.

The fundamental and applied research programs of the Laboratory continued. Immunization studies to determine the value of multiple antigens were instituted in co-operation with the Indian Health Services. The program initiated last year in collaboration with Montreal City Health authorities to determine if infants can be protected from pertussis (whooping cough) by actively immunizing their mothers during the third trimester of pregnancy was continued. The studies relating to oral immunization with diphtheria toxoid were completed. It was found that this route has a limited value when used as a booster for adults but has no value as a primary stimulant. Fundamental research was continued into the nutritional requirements of mammalian cells under a variety of conditions, as were several investigations to determine the specific antigenic composition of certain viruses, bacteria and toxins.

The highlight of the control program this year was the testing for safety of over 20 lots of poliomyelitis vaccine produced by Connaught Laboratories, Toronto, and intended for use by the various provincial departments of health. The safety tests required to ensure the safety of this vaccine are, at the moment, most elaborate. Many hundreds of hours of professional and technical time were devoted to this project and some 500 monkeys were used as well as numerous other small animals and several hundred tissue culture preparations. It was most fortunate that the new Virus Laboratories were available for occupancy before this testing program was undertaken. Such a program could not have been handled in the old quarters.

During the year, plans for a new building to house the main unit of the Laboratory of Hygiene were completed, and construction is expected to commence shortly. The Director of the Laboratory spent a number of months in Europe on a World Health Organization travelling fellowship. Most of his time was devoted to a study of those broad health problems which should determine the functions of public health and hospital laboratories. The information obtained on this trip will very likely have an appreciable influence on future developments of medical laboratories in Canada.

Biochemical Research

During the year, studies on the nutrition of mammalian cells cultivated *in vitro* were continued and extended. In the course of this work, 410 new synthetic media for tissue cells were devised and tested on approximately 14,000 cultures. Mixture 199 of Morgan, Morton and Parker was used as a basic medium.

Earlier work from this section indicated that coenzymes might be necessary to extend the survival of tissue cells in chemically-defined media beyond the present 35-40 day period. A paper on this work has been submitted for publication. Studies on certain cofactors and new vitamins are being continued.

The critical requirement of isolated tissue cells for the amino acid L-cystine has been studied. The first of a series of publications on this work, which includes a survey of nearly 30 sulfur-containing compounds has been accepted for publication in the Journal of Biological Chemistry. A complex inter-relationship between the amino acids L-cystine and L-methionine and choline, another normal body constituent, has been revealed, and detailed investigation of this metabolic system is in progress.

Studies on the essential role of L-cystine have been extended to several strains of malignant cells which are under cultivation. In addition to the ascitic tumors and

the "L" strain, which were in use last year, HeLa strain cells, from a human cervical tumor, were obtained from Dr. Wm. F. Scherer of the University of Minnesota. It has also been found possible to store many of these special strains of cells in the frozen state and revive them as required. This will decrease the amount of routine (non-experimental) work required in their maintenance.

The use of chromatography has made it possible to analyse the nutrient media before and after cells have grown in it. This technique has yielded specific information on the rate at which cells utilize the ingredients of Mixture 199 and will form the basis of future improvements of this nutrient solution. These studies have also provided the basis for a specific test for the amino acid DL-homocysteine. An account of this test has been submitted for publication.

Experiments relating the rate at which cells utilize sugar to the total mass of tissue present have been undertaken. This work is being continued, and it is hoped that it will yield a better and quicker method for assaying new substances for the nutrition of cells *in vitro*.

A collaborative project with the Clinical Laboratory Services was undertaken to investigate the nutritional requirements of *Treponema Pallidum*, which has never been cultivated in the absence of living cells. In this work 60 experimental solutions have been prepared and tested.

During the past two years extensive studies have been carried out, in collaboration with the Virus Section, on the propagation of influenza and mumps virus in tissues cultivated in chemically-defined media. The initial stages of this investigation have now been completed and the results published in the Canadian Journal of Microbiology, Vol. 1, December, 1954. Throughout the past year, particularly since November, 1954, large quantities of Mixture 199 have been prepared and supplied to the Virus Section for use in testing the poliomyelitis vaccine.

During the last eight months a start has been made in research associated with cancer. The major project is a study of the role of arginine in the synthesis of nucleic acids. Preliminary work has involved the partial purification of an enzyme from beef kidney with the capacity to synthesize arginine derivatives and a study of organic reactions utilized in the incorporation of radio-active carbon into these derivatives. Equipment for the routine study of urine and serum amino acids is being constructed.

Work in progress prior to the start of these experiments is described under the title "Arginine Degradation by *M. pyogenes* var *aureus*", in the Canadian Journal of Microbiology, April, 1955. A new method for the estimation of glucosamine has been devised. A description of the procedure has been prepared for publication.

Biologics Control Laboratories

Research and control constitute the two main functions of the Biologics Control Laboratories. The control work relates to the Laboratory of Hygiene's functions in its technical and advisory capacity to the Director of the Food and Drug Directorate. Research is divided into two main fields—immunology and antibiotics.

(a) **Section—Biologics Control Laboratory**—Tests for sterility, safety, identity and potency of biological drugs, such as vaccines, toxoids, antisera, were carried out as usual. A total of 1,678 specimens were handled throughout the fiscal year. Seventy samples of diphtheria and tetanus toxoids were examined and found to be of satisfactory potency. Testing on parenteral fluids for marketing and on blood transfusion materials and equipment for the Canadian Red Cross Blood Donors Service were continued. Three hundred and fifty-two samples representing 329 lots of preparations were tested for pyrogenicity and, of these, 18 (5½ per cent) were found to be unsatisfactory.

The control of medical supplies and biological products used by the Department of National Defence was continued through the Inspection Services. A total of 712 samples representing 200 lots of supplies or products, such as shell dressings, gauze bandages, absorbent cotton, burn dressings, silk and catgut sutures, were examined. Of these, four (two per cent) were found to be unsatisfactory.

Certain categories of products such as liver extract, ACTH, intravenous solutions, etc., were tested for pyrogenicity in addition to sterility and safety. A total of 145 samples were studied, and 21 of them (14 per cent) were rejected because of pyrogenicity. Three hundred and eleven samples of poliomyelitis vaccine were examined for freedom from bacterial contamination. This represented 19 lots, all of which were found to be satisfactory in this respect.

(b) **Section—Immunology**—The studies relating to oral immunization with diphtheria toxoid were completed.

Immunization studies in co-operation with the Indian Health Services of this Department have been instituted. To date, 1,100 blood specimens have been received from Indians and Eskimos across Canada, and these have been tested for 13 different antibodies. It is hoped that these results will serve as an indicator for future immunization programs. Three studies are now under way to determine (a) the optimum dosage for diphtheria immunization, (b) the effect of using six antigens, i.e., T.A.B. vaccine plus diphtheria-tetanus-pertussis, and (c) the value of pre-natal immunization against typhoid and para A and para B.

The value of pre-natal immunization against whooping cough is being studied in collaboration with the Montreal City Health authorities. Blood specimens have been received from more than 100 mothers and their offspring. The pertussis antibody titres of the mother's blood at parturition and the antibody level of the baby's blood at three and six months were determined. The study of passive immunization of infants resulting from the inoculation of their mothers during the last trimester of pregnancy is still in progress.

(c) **Section—Immunochemistry**—During the year this section continued to carry out chemical assays of antibiotic preparations in co-operation with the section of Antibiotics.

The laboratory participated in a collaborative assay sponsored by the World Health Organization for the setting up of an international standard for terramycin. At the invitation of the United States Food and Drug Administration, chemical assay was also carried out in collaboration with other laboratories on a proposed reference standard for chloramphenicol. In addition, a number of chemical determinations were made on different lots of antibiotic preparations received for marketing certification.

During the year a radio-isotope unit was established. The first project will be to label with radio-active iodine, purified antigens of *H. pertussis* to determine the route and distribution of the organisms following inoculation. Some preliminary work to determine the effects of iodination on antigenicity has been carried out.

(d) **Section—Antibiotics Laboratory**—During the year, approximately 500 separate samples of antibiotics were received. This material represented 17 different antibiotics and more than 200 different antibiotic preparations and formulations. Nearly all of these specimens were new antibiotics or new formulations submitted by various manufacturers for examination. A summary of tests performed on these samples follows:

Potency (various types of assays)—510; toxicity—150; sterility—90; pyrogens—69; moisture—25.

On behalf of the Inspection Board, Department of National Defence, analyses were performed on 48 lots of antibiotics. Specimens were also identified and examined for purity and potency for the Defence Research Board.

As required by the Food and Drug Regulations, inspections were made of 38 establishments producing biological products. Because of unsatisfactory conditions found in some of these plants, the Canadian biologics licence of two firms was cancelled and suspended in the case of two other concerns. Improvement in manufacturing techniques for methods of testing were recommended in several other instances.

A total of 40 new drug submissions were received from manufacturers who wished to place this material on the Canadian market. This literature was carefully examined and, in most instances, specimens of the product were obtained and tested.

The increased incidence of infection caused by antibiotic resistance of staphylococci has led to an investigation of the staphylococcus toxins. The toxin-producing qualities of a large number of staphylococci were examined, and various techniques for producing the toxin were studied. Methods have been developed for removing the active toxin from the media in which it was produced. By fractionation procedures, partial purification of the toxin has been accomplished. Attempts are now being made to separate the various active principles of the toxin and to define some of the chemical characteristics of this material. It is hoped that some of it may be of value as an immunizing agent.

Bacteriological Laboratory Services

(a) **National Staphylococcus Bacteriophage Typing Centre**—The Laboratory of Hygiene acts as a national reference centre for the type identification of pathogenic staphylococci, those micro-organisms commonly responsible for boils, breast abscesses, pustular infections and many other pyogenic infections. There are at least 30 different types of pathogenic staphylococci which can be differentiated by bacteriophage typing. Many of these types are of epidemiologic importance, and it is only by typing that outbreaks of staphylococcal infection can be studied and controlled. During the year, 290 cultures, most of which were from outbreaks in hospitals in Saskatchewan, Alberta, Quebec and Ontario, were received for typing. Two hundred and seventy-one (93 per cent) were successfully typed. Sets of phages (20) and of their propagating strains (223 phages and 214 staphylococcal cultures) were distributed to 11 laboratories throughout Canada. During the year a new type "81" was discovered and described, and confirmed by the International Centre in London with which the activities of the National Laboratory are closely integrated. A senior member of the staff is a member both of the Sub-Committee of the International Association of Microbiologists on the Bacteriophage Typing of Staphylococci and of the Sub-Committee on Bacteriophage Typing of the American Public Health Association.

Two scientific papers were presented during the year, one "Resistant staphylococcal Infections" to the combined meeting of the Section of Industrial Medicine of the Ontario Medical Association and the Industrial Medical Association of the Province of Quebec (Can. Serv. Med. Jour., Dec., 1954), and the other "Staphylococci Resistance to Antibiotics and Phage Types" to the meeting of the Laboratory Section of the Canadian Public Health Association (Abstract, C.J.P.H., Jan., 1955).

(b) **National Enteric Bacteriology Centre**—This laboratory continues to function as the official national reference centre for the identification (typing) of salmonella and shigella. During the year, 1,007 cultures and 16 stool specimens were received for diagnosis. Of these, 668 were identified as salmonella (318 of human origin and 350 from animal sources), 155 as shigella, 6 as alkalescens-dispar, 42 as paracolons, 68 as *Escherichia coli* and 28 belonging to other genera. Information on the distribution of these bacteria throughout Canada was collected and reports were issued quarterly and annually to the provincial public health laboratory directors on the incidence and special

epidemiological features of the infections caused by these bacteria. The predominant salmonella types received from human sources were *S. typhi murium* (117), *S. typhi* (41) and *S. paratyphi B* (29), while the predominant animal strains were *S. typhi murium* (95), *S. thompson* (80) and *S. bareilly* (80). The most common shigellae received were *Sh. sonnei* (98), *Sh. flexneri* 3 (43) and *Sh. flexneri* 2A (9).

This year, five *Salmonella* serotypes were reported in Canada for the first time: *S. give* in Alberta from turkeys, *S. infantis* in Quebec from humans, *S. dublin* from humans in Quebec, *S. litchfield* in Nova Scotia from humans (also isolated in the Ontario laboratories) and *S. loma linda* in British Columbia from humans. During the year 32 different serotypes were identified and the total number of types which have been reported in Canada to date is now 62. Diagnostic reagents prepared and supplied to the provincial laboratories and to D.V.A. hospital laboratories included a total of 330,810 ml. of carefully standardized antigens and 1,391 ml. of antisera. During the year, 15 *E. coli* antisera were added to the list of reagents available at the Laboratory to allow the provincial public health laboratories to identify all those serotypes of *E. coli* which have been associated with infantile diarrhea.

Close liaison is maintained with other national centres through the World Health Organization's International Reference Centres at Copenhagen, Denmark, and Chamblee, Georgia, U.S.A.

Research is being carried out on transduction of various characteristics in the salmonella genus, and a paper describing a method for separating mixed cultures of salmonellae was published in the Canadian Journal of Microbiology.

(c) **Miscellaneous Bacteriology**—The laboratory continued to act as a reference centre for the serologic grouping and typing of haemolytic streptococci. A total of 836 ml. of diagnostic antisera was prepared and distributed to various public health and hospital laboratories. Collaborative studies with the Hospital for Sick Children, Toronto, on rheumatic fever were continued, the laboratory carrying out anti-streptolysin O (ASO) titrations on 142 specimens of patients' sera during the past year. A number (47) of ASO titrations were also carried out for other hospitals and for some of the provincial public health laboratories.

During the year 70 unusual cultures were received for study and identification. In addition, 49 cultures of *C. diphtheriae* were received for typing and virulence testing. Gravis type 2 (23) and Intermedius (19) were the commonest found. In monkeys, from the monkey colony dying of intercurrent infections, *Pneumococcus* type 19 was isolated from the lungs of six and *Pasteurella multocida* from four.

Sanitary Bacteriology

The Laboratory continued to provide services to the Food and Drug Directorate and to the Division of Public Health Engineering with particular emphasis on the shellfish-producing areas in the Maritime Provinces.

(a) **Shellfish Control**—As part of the control of the shellfish industry and of certification of shippers by the Department of Fisheries for export of their produce to the United States, the mobile laboratory conducted bacteriological surveys in two shellfish-producing areas in New Brunswick and Nova Scotia. In the course of these surveys 855 water samples and a number of shellfish specimens were tested.

(b) **Clam Studies**—The research project established the previous year on the cleansing of soft-shell clams was continued. A suitable cleansing site was located after extensive testing of water samples, and a large scale semi-commercial clam-cleansing study was conducted. A total of 850 water samples and 267 clam specimens were examined during the study. It was found that self-cleansing in natural sea-water was

an effective procedure for the cleansing of moderately polluted soft-shell clams but that adequate bacteriological control must be provided for any proposed commercial clam-cleansing operation.

(c) **Continuing Research**—Investigations of the incidence and significance of coliform bacteria and enterococci and of the relative efficiency of various techniques for the enumeration of these organisms were continued during the year. A paper, "Bacterial Indices of Pollution in Oyster-Producing Areas", was presented at the meeting of the Canadian Society of Microbiology and another, "The Membrane Filter in the Bacteriological Analysis of Sea Water", was read at the meeting of the Laboratory Section of the Canadian Public Health Association.

(d) **Shellfish Toxicity Control**—A total of 775 shellfish extracts were tested for toxicity during the year. This appreciable increase was due largely to the development of clam-producing areas in the Province of Quebec. An outbreak of paralytic shellfish poisoning occurred on July 15, 1954, at Metis Beach, Quebec, when soft-shell clams, obtained from a 'closed' area, caused serious illness and two deaths in a family of seven persons. Officers of this laboratory collaborated with the Quebec Department of Fisheries in investigating this outbreak, and a report of the investigation was published in the Canadian Medical Association Journal, March 15, 1955.

(e) **Miscellaneous**—Seven surveys of bacteriological and sanitary conditions in five cafeterias in government buildings in Ottawa and Arnprior were carried out during the year. Ninety-three utensils used in the serving and preparation of food were examined bacteriologically. Reports with recommendations regarding the control of sanitation in these establishments were submitted to the Departmental Canteen Committee.

Water samples (237) were examined bacteriologically for the Public Health Engineering Division and for other agencies. Forty-eight specimens of meat were received and tested serologically for identity. More than 12,000 ampoules of lyophilized cultures were prepared during the year.

Parasitology

This sub-section continued to operate at the Institute of Parasitology, Macdonald College, P.Q. Three hundred and fifty-three specimens were received for parasitological diagnosis from provincial laboratories and from various hospitals. In addition, 21 requests for various parasitological antigens were filled, four requests from provincial and D.V.A. laboratories for sets of parasitological material for teaching and review purposes were sent out on loan, and five requests for living *E. histolytica* cultures were filled.

Two separate courses of four weeks' duration for senior laboratory technicians in practical laboratory parasitology were given with representatives from the Department of Veterans Affairs, provincial laboratories of health and the Canadian Navy attending.

A paper, "Reaction to Temperature by Infective Larvae of Nematodes", was submitted for the Royal Society (Zoology Section) meeting in Toronto in June.

Virus Research Laboratories

In April 1954, a laboratory investigation was undertaken at the request of the Department of Public Health of Saskatchewan on the serological evidence of neurotropic virus infections in poliomyelitis patients who had shown unusually severe and atypical symptoms during their acute illness in the summer of 1953. The survey of about 500 cases resulted in the discovery of complement fixing antibodies to the Western type of equine encephalomyelitis virus in about six per cent of the sera tested, all of which came from one particular area. This result indicated that the disease had been a complicating factor during 1953 epidemic of poliomyelitis in Saskatchewan.

At the request of the Department of Veterans Affairs in British Columbia, a serological survey was carried out on cases of multiple sclerosis to establish if a relationship between this disease and one or the other of the neurotropic virus diseases existed. Such a relationship had been claimed by a research group outside of this country. No antibodies to the known equine encephalitides were found in these patients, and no relationship between these diseases and multiple sclerosis could thus be established.

Between January and March, 1955, a total of 150 representative samples of throat-washings for the isolation and identification of influenza virus was received from most of the Canadian provinces. A laboratory investigation of these specimens was undertaken by the Virus Laboratories, representing the Canadian Information and Strain Typing Centre for the World Health Organization. From a number of these throat-washings, influenza virus type B was isolated, which was not related to the classical type B (Lee) strain, but which had some relationship to the more recently isolated strains of influenza B virus (1949-B-Sweden and 1953-B-Ottawa). The results of this investigation were reported to the W.H.O. Centres in London, England, and Geneva, Switzerland.

Specimens received from patients in an outbreak, thought to be poliomyelitis, in Fort Vermilion, Alta., early in 1954, yielded no poliomyelitis virus on repeated isolation attempts. They were also negative for Coxsackie viruses.

During the fiscal year 1954-1955, 16 specimens were submitted from various provincial laboratories for the isolation of Coxsackie and/or poliomyelitis viruses. All but one were negative; from it a Coxsackie group A virus was isolated.

During the year 783 samples of standardized viral antigens and antisera were distributed by the Virus Laboratories to the provincial health laboratories for the routine diagnosis of viral infections.

A total of 762 sera were received from the provincial departments of health, the Departments of National Defence, Veterans Affairs, and the Indian Health and Immigration Medical Services; 6,246 serological tests were carried out with these samples. A total of 222 specimens for the isolation of virus were received, and 2,231 serological tests were carried out with antigens prepared from these specimens.

Since October, 1954, a large proportion of the laboratory personnel has been engaged in the viral control of the poliomyelitis vaccine, produced by the Connaught Laboratories, Toronto, and to be used in a large scale vaccination program of Canadian children during the spring and summer of 1955. These governmental control procedures included safety tests on the vaccine in about 500 monkeys and in many other animals, as well as in numerous tissue cultures.

The new Virus Laboratories were occupied early in October, 1954, and were officially opened by the Minister of National Health and Welfare on December 16. Taking part in the ceremony were the Minister of Public Works, the Deputy Minister of National Health and Welfare (Health), and senior members of the Department. Also in December the new laboratories were visited by the directors of the provincial department of health laboratories, on the occasion of their annual meeting in Ottawa.

Since the occupation of the new Virus Laboratories, the diagnostic services available to the provinces have been extended to include poliomyelitis. The isolation and typing of virus strains is carried out in tissue cultures, using the standard trypsinised kidney cell technique.

Research is being conducted on the stabilization and purification of virus diagnostic antigens to increase their specificity and diagnostic value. A procedure was developed whereby stabilization of viral antigens was achieved by neutralization of the formalin present, and by addition of arginine before lyophilization of the products. The results of this work have been published in the February, 1955, issue of the Canadian Journal

of Microbiology. In the course of this study it became necessary to develop a colorimetric method for the determination of nitrogen suitable for the mass investigation of biological specimens varying widely in nitrogen content. A convenient method meeting these specifications was designed and was published in the September, 1954, issue of *Analytical Chemistry*.

Studies on the propagation of influenza and mumps viruses in tissue culture with chemically-defined culture media, carried on in collaboration with the biochemical research section have been concluded. Influenza and mumps virus appeared to propagate equally well in healthy, actively growing cells, or in cells depleted of intracellular nutrients and undergoing degeneration. This work was published in the December, 1954, issue of the *Canadian Journal of Microbiology*.

Research is being carried out on the preservation of cells at low temperatures, for subsequent use in tissue cultures. The development of a practicable complement fixation test for diagnostic purposes in poliomyelitis also constitutes a current research project.

Clinical Laboratory Services

Clinical Chemistry—Work has continued on the Manual of Procedures in Clinical Chemistry. The finished sections have been reviewed by a committee formed by the Canadian Association of Pathologists, and their critical comments have been received and evaluated. Final copies of these sections have been prepared incorporating the various suggestions and recommendations and are being prepared for publication.

The study of methods for estimating blood constituents has been continued with particular attention being paid to the estimation of amylase, calcium, cholesterol, proteins, hemoglobin, iron, CO_2 capacity, and acid and alkaline phosphatases in blood. Methods for the estimation of proteins in cerebrospinal fluid and urine have also been studied.

Further studies have been made on micro methods for determining many of the common blood constituents. These methods are being incorporated into the manual. A system of ultra-micro analysis for use in hospital laboratories has also been set up and studied. The following determinations can be made on very small amounts of blood: sugar, N.P.N., sodium, potassium, chloride, carbon dioxide combining capacity, proteins, pH, and packed cell volume. These micro methods proved useful in the treatment of several premature infants, full-term infants, and adults from whom only very small amounts of blood could be obtained.

Several instruments used for colorimetric and flame analysis have been examined and tested. Standard solutions have been sent to a number of hospitals, and others, submitted by hospitals and purchased from supply houses, have been analysed. The results of three evaluation studies of the accuracy of glucose estimations in hospitals in two provinces have been assembled and accepted for publication in the *Canadian Medical Association Journal*. Three laboratory supervisors from large hospitals have been trained in clinical chemistry methods.

Five large lots of human serum have been obtained, divided into small samples and frozen for use as controls in clinical chemistry determinations. A study has been carried out on the use of this control serum in hospital laboratories and its stability over the 12-month period has been tested.

A project carried out in collaboration with Dr. H. Schwarz of the Civil Service Health Division has been concluded. This study was concerned with an endocrine function of the thymus gland. Evidence has been obtained which indicates that the thymus gland produces a substance which has a definite effect on the calcium and phosphorus levels of the blood and which is antagonistic to the action of the parathyroid gland. This work will soon be published.

Syphilis Serology—This division serves as a national reference laboratory for syphilis serology. The preparation and standardization of antigens and the processing of complement for use in all provincial public health laboratories has been continued. During the year about 30 litres of Kahn antigens were distributed. The highly purified diagnostic reagent, cardiolipin antigen, is gradually being adopted. As a result there has been a marked increase in the quantities of V.D.R.L. and Kolmer cardiolipin antigens which have been requested. Thirty-four litres of dehydrated complement were sent to provincial laboratories during the year.

A seventh serological survey has been completed. Blood specimens from 66 syphilitic donors and 104 non-syphilitic donors have been sent to each of the provincial laboratories. The results are being compiled.

Studies on the substitution of synthetic compounds for naturally occurring cardiolipin and lecithin presently used in cardiolipin antigens have been continued in collaboration with Dr. Erich Baer of the Banting Institute. This year, the chief interest has been in an unsaturated dioleyl lecithin synthesized for the first time by Dr. Baer. Another unsaturated lecithin extracted from yeast by Dr. Hanahan of the University of Washington has also been studied. The results of these investigations have been incorporated into two papers for publication.

A laboratory has been equipped for the performance of the *Treponema Pallidum* immobilization test, a highly technical confirmatory procedure in the diagnosis of syphilis. The test is at present being performed in two provincial laboratories, one of which (Ontario) provides a service to the remaining provinces. The Laboratory of Hygiene unit is now in a position to take a portion of this load. Moreover, it will be possible to aid other laboratories in the establishment of T.P.I. units. Certain aspects of the test are being investigated. In addition, the Laboratory is participating in a program being conducted by the World Health Organization to improve and standardize the T.P.I. test.

The senior officer of the division has continued to serve on two international committees: (a) Sub-Committee for the Development of Standard Serologic Methods of the American Public Health Association, (b) Expert Advisory Panel on Serology and Laboratory Aspects of the World Health Organization.

Zoonosis Section

Prior to August, 1954, the zoonosis section operated as a branch laboratory at Kamloops, B.C., where it was established in 1939, in conjunction with a branch of the Division of Entomology, Department of Agriculture, primarily to conduct investigations on the incidence and other aspects of tick and insect borne diseases in Western Canada.

In August the branch laboratory was closed, the equipment shipped to Ottawa and the building turned over to the Department of Agriculture. Three members of the staff transferred to other departments, three were released from the service and two, the officer-in-charge and one assistant technician were transferred to Ottawa.

The services,—antigen production and special diagnostic services,—which were provided at Kamloops for the provincial public health laboratories and for the D.V.A. hospitals were resumed in the new section established, temporarily, in the new Virus Laboratories building. The plague, rickettsial, leptospiral and other disease investigations which had been initiated at the Kamloops laboratory are being continued insofar as facilities permit in the Ottawa laboratory.

The interruption in operations, due to transfer of the laboratory from Kamloops to Ottawa and the loss of experienced personnel, necessitated drastic curtailment of the investigational work being carried out this year. However, despite the transfer, slightly more than 5,000 specimens submitted by the health departments of Alberta and British

Columbia were examined for evidence of plague and Rocky Mountain spotted fever. No surveys were carried out in Saskatchewan during the year.

Some 3,300 millilitres of concentrated diagnostic *Brucella abortus* and *Pasteurella tularensis* antigens (sufficient to conduct 111,300 diagnostic tests) were supplied to provincial laboratories and to D.V.A. hospitals, and 79 special diagnostic tests, mostly for leptospirosis, were carried out for other laboratories. Studies on more efficient methods of preparing diagnostic antigens were continued.

This work continues to be hazardous, and despite every possible precaution against laboratory infections, this year another member of the staff became infected and suffered a fairly severe attack of tularemia.

A paper reporting the results of a study on *Spirillum minus* infections was submitted for publication in the Canadian Services Medical Journal and, on the request of the publication committee of the American Public Health Association, a section on *Pasteurella multocida* was written for the new (fourth) edition of the text book "Diagnostic Procedures and Reagents", about to be published by the American association.

Administration

The Administration Section of the Laboratory provides all of the auxiliary services necessary for the operation of a scientific unit. These include: media and wash-up rooms, animal houses, general maintenance, work shops, stores, transport and the stenographic pool.

During the year the demands made upon this section were exceptionally heavy. The occupation of the new Virus Laboratories necessitated the purchase, recording and distribution of large amounts of equipment, materials and supplies. Items of equipment, such as animal cages, were fabricated in the Laboratory work-shop at a substantial saving in cost. The re-allocation of space in the old Laboratory of Hygiene building and the removal of the Zoonosis Section from Kamloops to Ottawa necessitated a number of minor structural changes, all of which were made by the Laboratory maintenance crew. The poliomyelitis vaccine control program necessitated the purchase and careful handling of more than 500 monkeys, which required special diets and protection from temperature extremes. Special arrangements had to be made to pick up and take care of poliomyelitis vaccine samples and supplies of monkeys immediately upon arrival regardless of the time of day or night.

During the year, the animal breeding colony in Hull produced 19,965 guinea pigs and 580 selectively bred rabbits. The test animal house in the main building produced more than 400 hamsters and handled 62,000 white mice.

Technical Advisory Committee on Public Health Laboratory Services

This committee, established by Order-in-Council, P.C.857, May, 1947, to advise the Minister on all matters relating to public health laboratories, and particularly to co-ordinate the activities of the federal laboratory with those of the provincial public health laboratories, held its tenth annual meeting in Ottawa in December, 1954.

The special feature of this meeting was a symposium on the laboratory diagnosis of virus diseases in which a number of the outstanding virus experts in the country took part. It was made clear that practical, relatively simple techniques are now available for the diagnosis of many viral infections. Such diagnostic services should now be made available, and it was recommended that consideration be given to the establishing of suitable units for the diagnosis of these diseases, strategically (on a regional basis) throughout Canada.

Serodiagnostic tests for syphilis, the Coomb's test, ASO mass testing, parasitology, standard methods for the bacteriological examination of water and milk, technician

training, antibiotic sensitivity testing and enteric infections were some of the problems discussed. The need of a good haematology manual for hospital and public health laboratory technicians was stressed, and federal assistance for its preparation and publication was requested.

The Laboratory of Hygiene agreed to put on a special refresher training course in clinical chemistry at the request of six of the provincial representatives.

The significance of a positive T.B. culture when the sputum is negative on direct smear examination has been questioned, and the Committee went on record as being strongly opposed to any view depreciating the public health significance of the positive culture regardless of the result of direct smear examination.

The special sub-committee on laboratory costs presented a report on work evaluation and costs of laboratory work in the provincial laboratories during 1953. As a result of these studies carried on for the past three years, fairly reliable estimates of the cost of the different laboratory examinations are now available.

INDIAN HEALTH SERVICES

It is not too difficult nowadays to plan and operate a health service for a typical North American city of 160,000 people. If, however, the education of its inhabitants happened to be well below average, if their traditions and outlook on life differed from those of the remainder of the country, and their level of prosperity was so low that only a handful could meet their medical expenses in full, the situation would become much more difficult. If, in addition, they were divided into more than 2,000 groups, some nomadic and many isolated, and scattered over 3,500,000 square miles of territory, the task of providing a health service for them would become enormous. That is the task with which Indian Health Services is faced.

The program being carried out by the Service has not been developed under statutory direction. The Indians have never been made wards of the Crown nor has the Crown assumed a legal obligation to provide an all-embracing health and treatment service for them. The existence of the Service is evidence of the recognition by the State of a moral, rather than a legal, responsibility towards a group whose economy would not otherwise permit them adequately to care for themselves. It has expanded in response to the urgent need of many groups for help. It functions primarily as a public health service, because of the conviction that in the application of these principles lies the best prospect of a steady improvement in the health of the Indian and the Eskimo, but it also provides or arranges for the active treatment of individuals who would otherwise be denied it. It is prepared to hand back these functions to the home, the local community and the province when these agencies exhibit the will and the resources to take them over.

At the latest published census in 1949 the Indian population of Canada was shown as 136,500 and the Eskimo 9,300. The death rate is somewhat higher than the average; in 1953 the crude rate for all Canada was 8.6 per thousand while the Indian rate was somewhat over 10. Their birthrate is much higher; in 1953 the Canadian rate was 28.2 while that of the Indian was almost 38. About 1,000 Indians apply each year for enfranchisement, thus assuming the full rights and full responsibilities of Canadian citizenship. The net result is an increase in the Indian population of about 1½% per annum so the population in 1954 may be estimated at 150,000. These factors also operate in the Eskimo group whose population is now approximately 9,600.

Finally, administration of all aspects of Indian Affairs other than health is the responsibility of the Department of Citizenship and Immigration while the Northern Administration and Lands Branch of the Department of Northern Affairs and National Resources plays the same role in relation to the Eskimo.

Facilities and Staff

The country has been divided into five administrative regions with headquarters at Vancouver, Edmonton, Regina, Winnipeg and Ottawa. Each of these major units is further subdivided into zones and within each zone is a variable number of field installations. Facilities of one kind or another are maintained in all provinces and territories. When circumstances do not justify the operation of a separate unit, the native groups are cared for under arrangements with local agencies. In the more isolated districts where constant professional surveillance may be impossible to arrange, the system is rounded out by the help generously volunteered by scores of missionaries, teachers, traders and officers of all Government departments who supply simple drugs, provide such first-aid assistance as lies within their abilities and act as sentries who contact the nearest administrative centre at the first sign of emergency. Some of these people receive a small stipend; others give their services gratuitously; in all cases the work they are doing is motivated by an interest in and a desire to help their less fortunate neighbours.

The basic field unit within the Service is the Health Centre of which 61 were in operation during 1954. A typical centre of this type consists of a dwelling and an office and is staffed by a nurse. She provides medical attention within the limits of her resources, but her chief concern is with the planning and implementing of a public health program. She has to be active in many fields, but she tries to devote a good part of her time to home visiting, health education and preventive inoculations. Sometimes a few beds are added to this basic pattern, and provision is made for the admission of less serious cases such as maternity, childhood illness and minor accidents. The unit then becomes known as a Nursing Station and is usually staffed by a graduate nurse, a practical assistant and a fireman-labourer. One hundred and fifty-seven such beds were operated in 35 nursing stations during the year. Also in operation were 11 Clinics, staffed by one or two doctors and one or two graduate nurses. These are located in areas of high Indian population density and provide a combined health and treatment service. Usually the doctor is accorded privileges in the local hospitals. A similar doctor-nurse team was based on 14 of the 18 Departmental hospitals with the nurse carrying out the public health work under the supervision of the physician and the facilities of the hospital being used for the necessary follow-up and inpatient care. The functioning of this field-program during 1954 called for the full-time services of 39 medical officers and 106 graduate nurses. Their work was supplemented by a team of 11 dentists who practiced all types of dental surgery, sometimes under difficult conditions, but who attempted to concentrate on prophylactic care and dental health education in the youngest age-groups.

The 2,223 beds and bassinettes in the 18 Departmental hospitals were fully occupied. Now and again, due to pressure of circumstances, they had to be used beyond the rated capacity. These institutions range in size from 20 to 500 beds, and had a professional establishment of 43 medical officers and 232 graduate nurses. The greatest number of admissions are still tuberculous, but a large amount of general medical and surgical care is provided, particularly in the small institutions.

The total number of full-time employees both in the hospitals and in the field providing this health and treatment service was 1,600. Amongst these were 193 Indians and Eskimos. To round out the program and to ensure that even the most remote bands should have access to professional help, it was found necessary to employ 63 part-time physicians and to receive occasional accounts from more than 1,200 doctors and over 120 dentists in all parts of the country. Indians and Eskimos were treated in more than 600 non-Departmental hospitals which accounted for more than one-half of the total patient days during the year. On April 1, 1954, the Indians in British Columbia were accepted into the B.C. Hospital Insurance Scheme which became subsidized by a provincial sales tax. Until that time the Department had paid all the necessary premiums.

Data on patients treated in hospital, whether Departmental or non-Departmental, are shown in Tables 10 and 11, following.

Field Activities

The greatest problems facing the Directorate are racial rather than individual in scope, and many are peculiar to the Service. The depressed economic and educational level of most, the inadequate housing and poor nutritional status of many, the ignorance and superstition rife amongst some, all contribute to the high incidence of disease still found amongst the native peoples. Most striking at first glance is the relatively high rate of several communicable diseases, which may assume a severe form. Gastro-enteritis of infants, measles and pertussis are often followed in the young by a fatal pneumonia. Underlying these more striking differences and contributing to their prevalence is a widespread ignorance of the basic principles of sanitation. Most important of all, perhaps, and most difficult to treat, is the need these people have for help in spanning the cultural and educational gap that lies between them and full social integration.

Hence, the field campaign during 1954 was of necessity spread over many fronts. An intense immunization program was carried out in all areas using the triple diphtheria, pertussis and tetanus antigen. B. C. G. immunization was stressed, and an attempt was made to give this protection to every newborn Indian child. In those districts where the risk was judged to be high, T.A.B. courses were given. A complicating factor in many such campaigns was that several native groups could only be assembled at irregular intervals, and it was sometimes impossible to complete the course initiated on these occasions.

In all parts of the country heavy emphasis was laid on health education. For this to be effective it is essential that the field-nurse gain the confidence of those she is serving. Home visiting was given high priority, and in many areas first-aid and home-nursing classes were held. Wide use was made of the filmstrips which have been provided by the Directorate, supplemented by material borrowed from the National Film Board library. A poster-design competition was again held amongst the Indian children in British Columbia and prizes given to the successful entrants.

Two special projects were initiated in the field during the year. From a preliminary analysis of some records, the National Cancer Institute of Canada reported that the incidence of carcinoma of the cervix was unusually high in Indian women. In order that this observation might be confirmed and to ensure prompt investigation of suspect cases, a large proportion of field nurses were trained to take cervical smears, and machinery was set up to study the results.

Several immunological studies were planned in co-operation with the Laboratory of Hygiene, and some were commenced during 1954. The basic problem is to ascertain the natural immunological experience of the Indians by examination of specimens of blood from a representative sample of the population. Proceeding from this and other investigations an attempt will be made to produce an appropriate antigen mixture which gives the highest protection in the least number of injections. A start was also made on studying the protection afforded to the child by prenatal immunization of the mother.

Tuberculosis

It is not so long since a discussion on the health of Indians was synonymous with a discussion of the tuberculosis situation. The problem still loomed large in 1954 but not to the overpowering extent it did some years earlier. Until 1951 it was the leading cause of death among the native people, but in 1952 it had dropped to second place and in 1953 to fourth. It is expected that, when the final 1954 figures are available, it will have suffered a further displacement.

The drop in the death-rate has been the most dramatic result of the efforts made by the Service over the past ten years. This is summarized in Table 12, appended.

This striking decrease in the number of deaths is very gratifying, but the drop in morbidity, although considerable, has not paralleled that in mortality. Enough new

active cases were found during the year to prove that the point has not yet been reached where a less aggressive case-finding program can be justified.

Field survey parties were active in every part of the country and a greater coverage was attained than in any previous year. Some new ground was broken, notably in the East where a survey of the Labrador coast was undertaken with the co-operation of the R.C.M.P. and the provincial government. An important development in all regions was the increased number of Eskimos examined.

The results of field survey activities undertaken in 1954 are summarized in Table 13, following. The figures given do not include the many thousands of x-rays taken in hospitals, those referred by outside agencies, or the examinations carried out on non-Indian persons. The total field-survey films taken—75,187—represented a satisfactory coverage and in some areas more than 80% of the population was examined.

Extension of Services and Facilities

The eastern regional office was reorganized and strengthened, and a highly qualified and widely experienced medical officer was appointed as its superintendent. In all regions and at all levels the administrative machinery was examined and many improvements effected by the introduction of superior accounting, financial and procurement techniques. A regional administrative officer was appointed in British Columbia. The production of a manual on management methods for the guidance of administrative staff was undertaken in an attempt to consolidate the ground thus being gained.

There was no increase in the number of persons employed on public health work in 1954, but additional nursing positions were provided in Departmental hospitals to enable them to adjust to the amended work-week. The Directorate took over the full staffing of the Blood Indian Hospital at Cardston, Alberta, and the Blackfoot Indian Hospital at Gleichen, Alberta. In the first instance staffing had formerly been through arrangements made with the Sisters of Charity and in the latter it had been undertaken in conjunction with the Indian Band Council.

The new wing at Coqualeetza Hospital, Sardis, B.C., was completed and put into operation. This replaces the portion destroyed by fire in 1948, and its facilities made possible the development of a chest-surgical unit in the institution during the year. A new residence and health-centre was completed at Massett, B.C., and a new nursing station was put into operation at God's Lake, Man. Other new construction included two multiple dwellings for staff at Norway House, Man., doctors residences at Fort Simpson, N.W.T., and Miller Bay, B.C., a dispensary at Romaine, Que. and an erosion control project with new water intake system at Moose Factory, Ont. Most noteworthy of all, perhaps, was the construction of a new nursing station at Fort-à-la-Corne, Sask. Here, out of the total construction costs of \$41,000, the Indians themselves voluntarily contributed \$25,000.

Co-operation with Other Agencies

Indian and Eskimo Health Services, operating as it does in even the most remote parts of the nation, must lean heavily on the goodwill of many other agencies. Without the co-operation which has been so willingly given by the provincial and territorial administrations, the Royal Canadian Mounted Police, the Royal Canadian Air Force, and a host of other organizations, both governmental and private, much of what has been accomplished would have remained undone. The assistance provided at all levels and in every phase of the program by the administrators of Indian Affairs in the Department of Citizenship and Immigration and the administrators of Eskimo affairs in the Department of Northern Affairs and National Resources is worthy of special mention. Many problems are shared with these branches, and many have been overcome through co-operative action.

TABLE 10
(Indian Health Services)
INDIANS

Movement of Patient Population in Departmental and Non-Departmental Hospitals
during the Calendar Year, 1954*.

Indian Population — 151,000.

—	General†	T.B.	Mental	Total
Admissions (Including Transfers).....	27,875	2,893	117	30,885
Admissions per 1,000 population.....	230.4	19.2	.8	250.4
Total Patient Days.....	376,388	978,285	116,156	1,470,829
Patient Days per Capita.....	3.1	6.5	.8	10.4
Discharges.....	26,382	2,327	56	28,765
Transfers Out.....	714	685	8	1,407
Deaths.....	349	56	8	413
Total Separations.....	27,445	3,068	72	30,585
Patient days of Separation.....	352,349	1,121,435	51,444	1,525,228
Average Stay of Separations.....	12.8	365.5	714.5	49.9

(†) Data for Indians under B.C.H.I.S. not included in General figures.
Calculations in this column only based on Indian population of 121,000.

(*) Excluding Newborn.

TABLE 11
(Indian Health Services)
ESKIMOS

Movement of Patient Population in Departmental and Non-Departmental Hospitals
during the Calendar Year 1954(*)

Eskimo Population — 9,600

—	General	T.B.	Mental	Total
Admissions (Including Transfers).....	832	420	4	1,256
Admissions per 1,000 Population.....	86.7	43.8	.4	130.8
Total Patient Days.....	29,483	144,185	3,216	176,884
Patient Days per Capita.....	3.1	15.0	.3	18.4
Discharges.....	736	283	3	1,022
Transfers Out.....	52	111	.....	163
Deaths.....	15	10	.....	25
Total Separations.....	803	404	3	1,210
Patient Days of Separation.....	22,505	131,385	264	154,154
Average Stay of Separations.....	28.0	325.2	88.0	127.4

(*) Excluding Newborn.

TABLE 12
(Indian Health Services)

INDIAN TUBERCULOSIS DEATH RATES, 1943-54

1943 — 662.6	1949 — 399.6
1944 — 605.0	1950 — 298.8
1945 — 565.7	1951 — 268.2
1946 — 579.1	1952 — 167.5
1947 — 549.8	1953 — 100
1948 — 488.5	1954 — 46.3 (preliminary)

TABLE 13
(Indian Health Services)
INDIAN AND ESKIMO TUBERCULOSIS—1954
(Some preliminary figures)

Region	Approximate Population	X-Rays taken Field Surveys	New Active cases (Field Survey)	Deaths
Eastern—Indian.....	50,000	9,479	223	9
—Eskimo.....	5,314	2,975	100	4
Manitoba—Indian.....	30,500	19,586	125	20
—Eskimo.....	1,896	917	20	4
Saskatchewan.....	18,000	14,280	54	9
Foothills—Indian.....	23,400	13,734	93	15
—Eskimo.....	2,397	1,318	11	3
Pacific.....	30,000	12,898	270	17
Indian.....	151,000	69,977	765	70
TOTAL—.....	.....	.....	.....	(A)
Eskimo.....	9,607	5,210	131	11
	160,607	75,187	896	81

(A) Approximate death rates—Indian..... 46.3 per 100,000
Eskimos..... 105 per 100,000
Combined.... 50 per 100,000.

MEDICAL ADVISORY SERVICES

CIVIL AVIATION MEDICINE DIVISION

This Division has continued to act in an advisory capacity to the Department of Transport, (Air Services Branch), other government departments, interested organizations and the public generally on the health, safety and comfort of aircrew, groundcrew and passengers by air. The Division has in particular acted as medical adviser to the Department of Transport, (Superintendent of Air Regulations and Controller of Telecommunications) in the medical requirements for civil aviation personnel.

The trial run for the decentralization of the procedure for the assessment of medical examination reports for aviation personnel, conducted in the Department of Transport's Toronto District office, proved to be of sufficient value that the Department of Transport requested this procedure be introduced in all six district offices as soon as possible. Accordingly, six part-time district medical officers were appointed at the following centres: Edmonton, Montreal, Moncton, Toronto, Vancouver, and Winnipeg.

District medical offices were opened during the months of May, June, July and August. The Department of Transport has provided accommodation and clerical staff in all of the offices except Toronto. Although there have been minor administrative details to work out with the Department of Transport, the pilot personnel, the commercial operators and the local flying clubs have expressed an appreciation of this system. It has also assisted the Department of Transport in the decentralization of the licensing procedure for aviation personnel.

The value of the Regional Medical Consultant Boards established in each of the Department of Transport District Offices has been further demonstrated by the assistance provided in the assessment of commercial and airline transport pilots with borderline and contentious medical conditions.

A revision of the "Department of Transport Provisional Physical Standards for Aviation Personnel" and the "Department of National Health and Welfare Handbook for Civil Aviation Medical Examiners" was started. These two publications are being combined and will be published as a "Manual for Civil Aviation Medical Examiners."

Co-operation with the Department of Transport, Department of National Defence, Royal Canadian Air Force Institute of Aviation Medicine and Defence Research Board (Defence Research Medical Laboratories) has continued and assistance has been given to the Department of Transport towards investigating problems of a medical nature or involving the assessment of the human factor in the administration of the air regulations.

Training in aviation medicine for the civil aviation medical examiners appointed by the Department of Transport has been confined to visits by the Chief to the district offices or to the offices of the medical examiners in areas where problems were more pronounced. Due to the time required to establish the district medical offices, a post-graduate course in aviation medicine was not conducted.

Observation and investigation has continued in the following subjects associated with aviation medicine: hearing loss among aviation personnel licensed to fly commercially by the Department of Transport; crash injury reporting; visual and colour perception requirements for private and commercial pilots; fatigue and hours of duty for commercial pilots and air traffic control personnel, and the air transportation of medical supplies or injured personnel related to civil defence. During the year, a Department of Transport Board of Enquiry requested the Division to convene a medical board to examine the air crew in the case of a serious but non-fatal accident.

Liaison with the Royal Canadian Air Force, the Air Cadet League of Canada and the Royal Canadian Flying Clubs Association was maintained to facilitate the medical assessment of applicants for the Royal Canadian Air Force Reserve Force Flying Training Program and the Royal Canadian Air Force Air Cadet Scholarship Flying Training Program. Liaison was established with the Canadian Army for assessing the medical reports of Army personnel trained in civil registered aircraft.

Liaison and discussion on civil aviation medical problems with the civil aviation divisions of other countries has increased.

Valuable assistance was given by the Royal Canadian Air Force Institute of Aviation Medicine in the assessment of special clinical cases associated with illnesses peculiar to flight. Instruction was also given to civil pilots and other air crew members on the medical aspects of flight at high altitudes.

CIVIL SERVICE HEALTH DIVISION

The past year marked the eighth year of activity of the Civil Service Health Division. No major changes in policies or functions occurred. Clinical activities are still confined to the Ottawa area. There has, however, been further expansion of services locally. Nursing-counsellor service has been extended to a further 2,000 employees, and several additional groups of employees engaged in hazardous or specialized work are receiving clinical service from the Health Centre. At the close of the fiscal year the advisory and diagnostic services of the division were being extended to approximately 33,000 civil servants in the Ottawa area with health unit services being available to 24,500, or three-quarters of the total.

During the year permanent health unit quarters were completed in the Shirley Bay Central Services Building of the Defence Research Board, affording considerable improvement in facilities and location. In July a new health unit was opened in the Confederation Building designed to serve, also, employees in the Justice Building, Justice Annex, and the new Supreme Court Building. In August a health unit was established to serve employees of the Department of National Defence on Victoria Island. Late in February the health unit serving Veterans Affairs employees in the Daly Building was moved to the new Veterans Memorial Building. There are now in operation 21 health units, two of which afford half-time service to small isolated groups. Some extension has occurred in the visiting service to small groups of employees located too far from health units to participate fully in the program. These employees benefit from periodic part-time visits of nursing counsellors from established health units. A further eight units are envisaged for the future, two of which may initially operate on a part-time basis.

Staff education increases in importance as new health units become established and more widely scattered and as the program continues to develop to meet the ever-changing needs of government departments and agencies. Organized orientation and in-service training classes for nursing counsellors are provided by the Health Centre consultant and administrative staff combined with on-the-job supervision and consultation at the health units. A comprehensive "Nursing-Counsellor Manual", including standing orders, policies and procedures, was completed recently as a staff education project. This has been received most favourably as a guide for nurses in industry both within and without the Department. Two new pamphlets, "Your Health Service and How to Use It", and "The Nursing Counsellor Service", have been prepared. The former pamphlet was designed particularly for the employee; the latter primarily for recruitment and information purposes. A series of coloured slides depicting the activities of this division were completed during the year to serve as visual aids in the interpretation of this work and also for staff recruitment.

The division continues to extend its facilities to public health nursing schools and medical students for field-work training. Members of the professional staff are contrib-

uting regularly to short training courses in employee counselling arranged by the Civil Service Commission. The purpose of these courses is to acquaint and instruct selected individuals of personnel divisions of government departments in the fundamental principles of early recognition and detection of employee emotional disturbances, and to encourage their referral as necessary to the available staff of this division or to appropriate community resources. In this connection it is worthy of note that the psychiatrist, in addition to his functions as a clinical consultant, has made considerable progress in the development of a program for the prevention of mental illness and the promotion of better mental health in the civil service. He has given valuable guidance and direction to nursing counsellors in the handling of the wide variety of mental and emotional health problems encountered in their daily work. All health units have been visited regularly and cases presented for discussion and guidance. Personnel officers and supervisors have been encouraged to bring forward and talk over their problems. Small groups of nursing counsellors meet at the Health Centre for case discussions to learn something of the ideology, dynamics and prognosis of particular psychiatric entities. Relevant reprints and articles are circulated to each of the health units as reading and reference material for the nursing counsellor. Nursing counsellors are encouraged to attend lectures of a psychiatric nature held by various community agencies. These and other measures are having their desired effect: more cases of a psychiatric nature are being reported, and what is even more gratifying is the attempt to solve employee problems shortly after their origin, oftentimes bringing personnel officers into the picture. One important aspect in this field is the growing understanding by personnel officers and supervisors of a shared interest in problem drinking as it affects employees and the public service, fully utilizing community diagnostic, treatment and rehabilitation facilities.

The service is now sufficiently well established, and relationships with other divisions and other departments have developed to the point where certain fact-finding studies can be undertaken with mutual interest and good will. In co-operation with the Nutrition Division, health units are presently conducting a survey on the breakfast habits of employees. It has aroused considerable interest and affords an excellent teaching opportunity toward improving the general nutrition and efficiency of employees. The division has continued to work in close co-operation with the Quarantine, Immigration Medical and Sick Mariners Services and the Indian Health Services of this department in arranging for examinations and consultations required outside Ottawa. The co-operation of the Occupational Health Division and of the Public Health Engineering Division has also been very helpful in investigating and remedying working conditions and environmental problems in the public service. Similarly, the division has utilized to the full the out-patient clinical facilities of the Department of Veterans Affairs and has been successful in working out new mutually satisfactory financial arrangements for services rendered by that department.

During the last four months of the fiscal year, a study of upper respiratory disease representing the experience of all health units was conducted. The study was carried out with two main objectives: first, to study the relative incidence of upper respiratory disease observed in health units; second, to determine by a study of early symptoms of onset whether the common cold and influenza-like illnesses might exhibit characteristic symptom patterns. Following an analysis of the total 12,687 cases of upper respiratory disease reported to the health units during this four-month period, some general observations may be deduced. No consistent pattern of early symptoms for practical application peculiar to the common cold or influenza-like illness could be established. Early symptoms in these upper respiratory illnesses appear to be due to viral agents in some cases and to bacterial pathogens in others. Secondary infection occurs frequently altering the course of the original disease. The nature and intensity of response to an infecting organism showed wide individual variation which accounts for the absence of consistent symptom patterns. A more detailed report will be prepared following a closer study of the data collected.

Health Unit Services

Table 14, following, presents a monthly summary of visits to the 21 health units operating in Ottawa, by sex, nature and classification of visit and disposal. A total of 168,414 employees reported to the health units, an increase of 7,400 over the previous year. This increase is largely accounted for by the opening of two units in the summer months. As in past years almost 75% of the over-all total were first visits for new disabilities, the remainder being repeat or follow-up visits for a condition previously reported. The seasonal fluctuation with respect to respiratory and digestive disorders, as well as the seasonal variation in the work load of the health units, is clearly demonstrated. An extremely high percentage, 97.5, of all employees visiting the health units were returned to work following assistance and advice received from the nursing counsellor. Only one of every 15 employees was referred to the Health Centre, family physician, hospital clinic or other community agency. Nursing counsellors are thus able to deal with more than 90% of the employees without further referral. The introduction of the 5-day week on a year round basis has continued to have a favourable influence on the use of sick leave. There is further evidence to suggest a reduction in sickness absenteeism, and personnel departments are encountering fewer cases of flagrant abuse.

The "Index" of Participation" expressed as the average monthly number of employee health unit visits per 100 personnel supervised, was 60 for the past fiscal year, compared to 68, 70, 65, and 61 for the previous four years. This index is a measure of the extent to which departments utilize the services afforded by the health units. The reduction in the index for the past two years coincides with the introduction of the 5-day week and is not an indication that health units are being utilized to a lesser degree.

Slightly more than 75% of all cases reporting to the health units are primarily for health reasons in which some specific complaint or organic disease is present. The remainder are for socio-economic or welfare problems, usually concerned with factors such as personal health and hygiene, nutrition and budgeting, family health, recreation, living accommodation or conditions arising from the severely handicapped. These problems require skillful handling, and a thorough knowledge of all community resources and facilities by the nursing counsellors is essential. It is here that her qualities as a health teacher and counsellor are utilized to the full.

Health Centre Services

Table 15, appended, summarizes the work conducted at the Health Centre including the activities of the certificate review section. A total of 7,519 medical examinations, consultations, emergency treatments, and immunizations were performed during the fiscal year. Medical examinations at the Health Centre are conducted for a variety of reasons, chief among which are pre-employment examinations for specific employee groups, examinations conducted under the Public Service Superannuation Act, periodic examinations for personnel unduly exposed to hazardous occupations, personnel proceeding to service abroad or isolated duty, and, finally, departmental requests for examinations required to determine physical fitness or emotional suitability for employment. Additional medical examinations were undertaken for special groups such as pre-employment examinations for Canadian Arsenals Ltd., personnel proceeding abroad under the auspices of the Colombo Plan, and periodic examinations for personnel of the Industrial Health Laboratories engaged in especially hazardous duties. Finally, at the request of Atomic Energy of Canada, Ltd., Chalk River, complete health services were instituted for employees of the commercial products division at Tunney's Pasture, including both pre-employment and periodic examination for those engaged in radiation work.

The psychologist has continued to develop his program working very closely with the psychiatrist, the welfare supervisor and the nursing counsellors. He has conducted

in all some 593 psychological assessments, more than half of which were referred by nursing counsellors and conducted at the health units from which the referrals were made. The remainder were referred by personnel officers or Health Centre physicians.

The psychiatrist, in his capacity as clinical consultant, has held 313 consultations. A considerable portion of his time has been spent in the health units. The majority of consultations are referred by medical officers at the Health Centre, departmental personnel officers and nursing counsellors.

The division has continued to provide guidance in ophthalmological problems to individual employees and to government departments in which work demanding a high standard of visual efficiency is performed. The pre-employment assessment of visual fitness of candidates for such work has proven to be a valuable procedure in reducing the incidence of visual difficulties which arise among employees whose work entails excessive eye strain. The special training in ophthalmology obtained by one of the medical officers has been found most useful in carrying out this phase of the work.

The certificate review section functions as an integral part of the Health Centre, with medical officers giving medical supervision and direction on a monthly rotating basis. In all, 68,560 physicians certificates of disability for duty were reviewed and processed together with 9,399 physical examination record forms. All medical certificates of disability for duty received in this division, following review and interpretation, are passed to the Public Health Section of the Dominion Bureau of Statistics. All data on sickness absenteeism is coded and analyzed by the Bureau and forms the basis of an annual statistical report on "Illness In The Civil Service". In addition, 416 special physical examinations were arranged for employees located outside Ottawa, usually at the request of the employing department, utilizing the services of immigration medical officers of this department, Department of Veterans Affairs' or private physicians.

Table 16, following, summarizes retirements from the service on medical grounds, according to disability. Some 205 retirements occurred during the year, 151 of which (75%) occurred within the 50-60 year age group. Diseases of the circulatory system, the nervous system and of the bones and organs of movement continue, as in former years, to constitute the chief causes of separation.

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TABLE 14
(Civil Service Health Division)
HEALTH UNIT STATISTICS—BY MONTHS
FISCAL YEAR 1954-55

	Total	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Number of personnel under supervision.....	22,383	22,410	22,175	22,131	22,191	22,793	23,080	24,152	23,961	24,382	24,547	24,429	20
Number of Health Units in operation.....	18	18	18	18	18	20	20	20	20	20	20	20	20
Number of visits—													
Total.....	168,414	12,440	13,134	14,631	12,175	12,823	15,005	13,788	14,308	14,804	14,905	14,986	15,415
First visit.....	9,186	9,808	10,860	8,980	9,205	9,967	10,155	9,967	10,240	10,573	10,473	10,503	10,844
Repeat visit.....	3,254	3,326	3,771	3,195	3,618	3,850	3,850	3,821	4,068	4,231	4,432	4,483	4,571
Visits by sex—													
Total.....	168,414	12,440	13,134	14,631	12,175	12,823	15,005	13,788	14,308	14,804	14,905	14,986	15,415
Males.....	80,042	5,816	6,150	6,701	5,766	6,002	6,711	6,719	6,839	7,033	7,187	7,380	7,338
Females.....	88,372	6,624	6,984	7,930	6,409	6,821	7,894	7,069	7,469	7,771	7,718	7,606	8,077
Nature of visits—													
Total.....	168,414	12,440	13,134	14,631	12,175	12,823	15,005	13,788	14,308	14,804	14,905	14,986	15,415
Illness.....	68,210	5,027	5,054	5,708	5,017	5,162	6,073	5,577	5,756	5,997	5,974	6,398	6,467
Accident.....	15,765	1,178	1,383	1,446	1,304	1,290	1,284	1,200	1,368	1,355	1,411	1,199	1,347
Consultations.....	16,712	1,289	1,363	1,538	1,286	1,463	1,486	1,488	1,513	1,169	1,392	1,292	1,433
Return-to-work visits.....	67,727	4,946	5,334	5,939	4,568	4,908	6,162	5,523	5,671	6,283	6,128	6,097	6,168
Classification of first visits—													
Total.....	121,794	9,186	9,808	10,860	8,980	9,205	11,155	9,967	10,240	10,573	10,473	10,503	10,844
Respiratory.....	33,350	2,779	2,390	2,130	1,249	1,608	4,133	3,317	2,813	2,938	2,965	3,840	3,188
Digestive.....	19,471	1,365	1,522	2,014	1,800	2,030	1,483	1,288	1,605	1,810	1,632	1,329	1,593
Skin and cellular.....	8,380	629	793	905	892	761	640	623	691	686	587	568	537
Menstrual disorders.....	6,767	546	612	707	601	558	571	495	568	616	487	469	533
Emotional disorders.....	2,027	169	155	185	181	169	170	171	149	154	161	151	212
Contagious diseases.....	124	11	6	6	7	5	7	9	8	8	25	14	18
Accidents, non-industrial.....	6,776	459	630	708	631	573	497	492	563	546	624	492	561
Accidents, industrial.....	4,856	402	403	404	367	353	409	331	422	449	475	415	426
Ill-defined and all others.....	40,043	2,826	3,297	3,801	3,252	3,148	3,245	3,421	3,421	3,366	3,517	3,225	3,704
Disposal—													
Total.....	168,414	12,440	13,134	14,631	12,175	12,823	15,005	13,788	14,308	14,804	14,905	14,986	15,415
Sent home.....	4,219	253	259	317	280	442	319	336	380	367	460	500	500
Returned to work.....	164,195	12,187	12,875	14,314	11,895	12,522	14,563	13,469	13,972	14,424	14,538	14,526	14,910
Referrals—													
Total.....	10,976	749	946	1,033	811	875	931	884	989	944	911	951	1,052
Referred to Health Centre.....	2,758	196	229	264	228	215	219	240	222	207	258	223	257
Referred to family physician.....	7,458	493	647	687	524	596	648	608	572	597	658	658	738
Referred to community agencies.....	760	60	70	82	59	64	64	36	77	65	56	70	57

Index of Participation—
Average monthly number of employee Health Unit
visits per 100 personnel supervised.....60

TABLE 15
(Civil Service Health Division)
HEALTH CENTRE STATISTICS
FISCAL YEAR 1954-55

NUMBER OF VISITS

Total.....	7,519
First visit.....	3,680
Repeat visit.....	3,839

VISITS BY SEX

Total.....	7,519
Male.....	5,025
Female.....	2,494

ANALYSIS OF VISITS

Physical Examinations.....	2,970
Pre-employment, periodic, P.S.S. Act.....	671
Foreign Service, isolated duty, postings, etc.....	480
Referrals — voluntary, department, health unit, etc.....	1,819
Consultations, Interviews, etc.....	4,261
Psychological.....	593
Psychiatric.....	313
Special — eye, X-ray, immunization.....	3,355
Accidents.....	288
Industrial.....	39
Non-Industrial.....	249

IMMUNIZATIONS

Total number of employees immunized.....	1,735
Total immunizations.....	2,517
Smallpox.....	637
T.A.B.T.....	635
T.A.B.....	415
Cholera.....	180
Typhus.....	85
Yellow Fever.....	341
Other.....	224

DISPOSAL

Total.....	7,519
Returned to work.....	7,422
Sent home.....	97

REFERRED TO FAMILY PHYSICIAN.....

121

TOTAL LABORATORY PROCEDURES.....

4,978

X-RAY

Total.....	5,528
Chest.....	1,931
Chest (photo-roentgen unit).....	2,916
Other.....	681

TABLE 16

(Civil Service Health Division)

RETIREMENTS FROM SERVICE — ACCORDING TO DISABILITY

FISCAL YEAR 1954-1955

Male—153 Female—52 Total—205

Cause of Disability	Age Groups					Total
	Under 40	40-44	45-49	50-54	55-59	
Infective and Parasitic.....	1	1	1	0	2	5
Neoplasm.....	2	0	0	4	6	12
Allergic, endocrine system, etc.....	0	0	0	3	5	8
Blood and Blood forming organ...	1	1	1	1	0	4
Mental, psychoneurotic, etc.....	9	5	7	5	7	33
Nervous system and sense organs.	4	2	2	3	8	19
Circulatory system.....	0	1	2	12	45	60
Respiratory.....	0	0	1	2	11	14
Digestive system.....	0	2	0	0	5	7
Genito-urinary system.....	0	0	0	3	2	5
Pregnancy, childbirth, etc.....	0	0	0	0	0	0
Skin and cellular tissue.....	0	1	1	0	1	3
Bones and organs of movement....	1	3	4	6	10	24
Congenital malformations.....	0	0	0	0	0	0
Symptoms, senility, etc.....	0	0	1	0	6	7
Accidents, poisonings, etc.....	0	0	0	1	3	4
Total all causes.....	18	16	20	40	111	205

QUARANTINE, IMMIGRATION MEDICAL AND SICK MARINERS SERVICES

The Quarantine, Immigration Medical and Sick Mariners Services administer a number of Acts and statutory regulations dealing with the health aspects of international travel and immigration, the treatment of sick mariners and the diagnosis and treatment of leprosy. In addition, medical facilities and advice are made available to several Government Departments. For the Department of National Revenue bona fide public hospitals are certified for sales tax exemption. For the Department of Transport periodic and special examinations are carried out on marine, harbour and river pilots and special groups of employees destined to serve in remote areas.

QUARANTINE SERVICE

The Quarantine Service administers the Quarantine Act and regulations and the Leprosy Act. In addition, its facilities in various seaports and airports are utilized as local medical offices for this and other federal departments.

New quarantine regulations were proclaimed on December 8, 1954, the chief changes being: (a) the addition of a sixth major quarantinable disease—louse-borne relapsing fever; (b) changing the status of Seven Islands, Que., from an unorganized quarantine station without facilities to a quarantine substation of Quebec City, with inspection and other facilities such as radio pratique under control of a part-time medical officer working under the direction of the quarantine officer at Quebec City and

(c) bringing quarantine procedures into conformity with those approved by the World Health Organization.

The six major quarantinable diseases are: smallpox; plague; cholera; yellow fever; typhus and louse-borne relapsing fever. In its efforts to prevent the spread of these diseases from infected areas, Canada's role under the International Sanitary Regulations has been to require all travellers coming from beyond certain parts of North America to be immunized against smallpox. Canada also co-operates in international measures to prevent plague by control measures to prevent port to port migration of rats. For Canadians proposing to journey to areas of the world where yellow fever is prevalent, there are 16 centres across Canada at which, during the year, yellow fever vaccine was administered to 3,277 persons to whom valid international certificates of vaccination were issued free of charge. At the chief ports of entry on both east and west coasts, facilities are maintained to deal with persons and conveyances found to be infected with disease or infested with vermin. Facilities continue to be maintained for the examination and sterilization of goods or things arriving infected with any disease or infested with vermin.

The World Health Organization receives reports of outbreaks of quarantinable diseases from most countries of the free world. This information is summarized and transmitted to member states who may then apply any necessary and approved health measure.

Of major concern to Canada is smallpox which is a highly infectious disease to all susceptible individuals. Although most children in their school years have been immunized against smallpox, there have been few adequate programs of re-immunization except for international travellers, 675,000 of whom are vaccinated annually as a result of Canada's vaccination requirements. This reduces the hazard of smallpox being introduced to Canada, but, in the event of the disease being imported, an intensive effort toward vaccination and revaccination of the population would be necessary.

At present all persons entering Canada from any country other than the United States, Alaska, Greenland, Iceland, St. Pierre and Miquelon, Bermuda, Cuba, Jamaica, the Bahamas, Virgin Islands, Puerto Rico, Panama Canal Zone or the Hawaiian Islands, must furnish satisfactory evidence of immunity from smallpox by reason of, within the three years immediately preceding arrival, either having had the disease or having been vaccinated.

International control measures against plague, typhus and relapsing fever are directed chiefly against individuals and conveyances infested with vermin. All vessels are inspected regularly every six months, and appropriate measures are taken to exterminate any vermin found. Persons found to be carrying vermin in their hair or clothing may be deloused by appropriate methods. Persons suspected of being or having been infected may be isolated and treated.

The number of vessels, crew members, passengers and other persons inspected at organized quarantine stations is shown in Table 17, following. Local customs officers, in their capacity as quarantine officers at unorganized ports, reported the entry of an additional 662 vessels.

The number of vessels inspected for vermin and rodents and the results of the inspections are shown in Table 18. Out of the 880 vessels inspected, 576 came from plague infected ports.

The number of aircraft, crew members and passengers inspected is shown in Table 19, following.

Approximately 70,000 International Certificates of Inoculation and Vaccination were issued.

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TABLE 17
(Quarantine Service)

SHIPS BOARDED BY QUARANTINE OFFICERS, 1954-1955

The following table indicates the number of ships boarded during the fiscal year 1954-1955, also total personnel on board, divided into their respective groups.

STATION	Vessels Inspected	PERSONNEL INSPECTED			Port Totals
		Crews	Passengers	Stowaways	
Halifax, N.S.....	664	76,292	129,859	11	206,164
Saint John, N.B.....	332	16,482	3,578	1	20,068
Quebec, Que.....	1,618	100,875	110,901	18	211,795
William Head, B.C.....	585	25,139	4,827	7	29,981
Totals.....	3,199	218,788	249,165	37	468,011

TABLE 18
(Quarantine Service)
CONTROL OF RATS ON VESSELS
1954-1955

PORT	Vessels inspected, fumigated and deratization certificates issued	Vessels inspected and exemption certificates issued	Vessels inspected and remanded or time extended	Vessels inspected and certificates endorsed	Rodents Recovered	
					Total Vessels inspected	Rats Mice
Halifax, N.S.....	8	48	86	142	9	2
Sydney, N.S.....	3	21	12	36	17	2
Saint John, N.B.....	13	13	4	35	3	2
Quebec, Que.....	35	35	3	92	24	2
Port Alfred, Que.....	3	75	32	169	72	2
Three Rivers, Que.....	4	85	195	343	31	2
Montreal, Que.....	31	25	31	34	31	2
Vancouver, B.C.....	1	3	3	373	880	2
Victoria, B.C.....	.....	.....	.....	96	96	2
Port Alberni, B.C.....	.....	.....	.....	.....	.....	.....
Totals.....	47	317	143	880	96	2

TABLE 19
(Quarantine Service)
INSPECTION OF AIRCRAFT SUBJECT TO QUARANTINE
FISCAL YEAR 1954-1955

AIRPORT	No. of Aircraft	No. of Crew	No. of Passengers	Total Persons
Dorval, Que.....	1,161	9,855	43,124	52,979
Gander, Nfld.....	7,343	62,317	302,230	364,547
Goose Bay, Nfld.....	794	6,645	25,403	32,048
Malton, Ont.....	192	1,144	7,145	8,289
Moncton, N.B.....	77	708	2,986	3,694
Sea Island, B.C.....	529	3,272	16,090	19,362
Stephenville, Nfld.....	429	3,627	19,446	23,073
Sydney, N.S.....	287	2,534	10,894	13,428
Winnipeg, Man.....	38	423	631	1,054
TOTALS.....	10,850	90,525	427,949	518,474

TABLE 20
LEPROSARIA ANNUAL CENSUS
1954-1955

	Tracadie	Bentinck Island
<i>Inpatients:</i>		
Remaining from last year.....	6	2
Admitted during year.....	0	2*
Died during the year.....	0	0
Discharged during the year.....	1	0
Remaining in hospital.....	5	4
<i>Outpatients:</i>		
Arrested — cases discharged from hospital, continuing treatment at home under medical supervision... ..	3	4
Total known cases in Canada.....	8	7
		15

* 1 case and 1 contact.

Leprosy

Leprosaria are operated at Tracadie, N.B., and Bentinck Island, B.C.

Six patients were under treatment at Tracadie at the beginning of the year and five at the year's end, one patient having been discharged at home as arrested and non-

infectious. The facilities are in a modern wing of the Hotel-Dieu de St. Joseph Hospital designed so that patients may have the maximum amount of comfort and recreation. Twelve single rooms are available, and recreational facilities include a woodworking shop and outdoor activities on a tract of land bordering on the Gulf of St. Lawrence.

Four patients were treated at Bentinck Island, two having been in hospital at the beginning of the year and two being admitted during the year. A patient admitted during the year was of Canadian origin, and the source of his infection is unknown. The majority of patients admitted in recent years were infected outside of Canada. This institution is built on the cottage system and ambulatory patients care for their own cottages and may do their own cooking if they wish. Some have gardens and raise chickens. All patients are under the direct supervision of a graduate nurse and medical care is provided by medical officers of the nearby William Head Quarantine Station.

At both leprosaria full use is made of the sulfatrone drugs which are doing much to brighten the prognosis for persons suffering from this disease. These drugs, however, are toxic and, in the initial stage of the disease, hospital treatment is essential. After a period in hospital, if the infection can be controlled, patients are then allowed to go home to continue treatment under supervision of the local health authorities.

IMMIGRATION MEDICAL SERVICE

The Immigration Medical Service carries out or directs the preliminary medical examination of immigrants abroad; the final medical examination of immigrants, visitors and persons in transit, following arrival in Canada; the observation, clinical investigation and treatment of those who are found to be ill on arrival and the treatment of indigent immigrants who take ill following arrival while en route to their destination in Canada or while being accommodated pending placement in employment. Medical, diagnostic and treatment facilities are also provided for all persons accommodated or detained in immigration halls across Canada.

Preliminary medical prescreening is now carried out in the United States, the British Isles, the British West Indies, the Dutch West Indies, Mexico and Central America, various countries of South America, Australia, New Zealand, South Africa, North Africa, Lebanon, Israel, Iraq, the Dutch East Indies, Japan, Korea, South-east Asia, Spain, Czechoslovakia, Yugoslavia, Roumania, Poland, Hungary and Bulgaria. Medical reports from these countries are assessed in Ottawa, and the results are transmitted to the Immigration Branch of the Department of Citizenship and Immigration so that persons who are likely to be rejected on arrival at a Canadian port can be advised not to come forward.

Examinations at many of the above places were carried out under the prescreen system for the first time during the year. In addition, regularly appointed roster doctors examine immigrants at Hong Kong, Karachi, New Delhi, Bombay and Calcutta.

Approximately 50 Canadian physicians were employed in Europe at offices located in the British Isles at London, Liverpool, Glasgow, Belfast and Dublin and in continental Europe at Paris, Brussels, The Hague, Copenhagen, Linz, Rome, Athens, Karlsruhe, Hamburg, Munich, Bremen, Hanover, Hanau and Berlin. Assisting the Canadian medical officers in Europe and working under their direction are roster doctors in the United Kingdom, Malta, Eire, Switzerland, Portugal, France, Norway, Sweden and Denmark.

The majority of immigrants now undergo complete medical examination before departure. This includes a chest x-ray and any specialized or laboratory examination that may be required. Final medical clearance is granted only after a final check following arrival in Canada.

Although fewer immigrants were examined during the year, examinations were conducted at an increased number of centres.

Examinations and consultations by Canadian medical officers overseas and in Canada are free. Roster doctors and physicians doing medical prescreening and taking x-rays charge a fee for their services.

Many healthy immigrants come from countries having a high level of tuberculosis infection and are more likely to develop tuberculosis than persons from countries with a low level of tuberculous infection. However, the medical screening of immigrants has been so effective that the morbidity rate for tuberculosis in immigrants is now approximating the various provincial rates in Canada. When arrested cases of pulmonary tuberculosis are admitted, provincial departments of health are advised of the name and address so that appropriate follow-up examinations may be carried out.

Medical facilities for the examination of passengers arriving by ship are located at the following ports: St. John's, Nfld., Sydney, N.S., Halifax, N.S., Saint John, N.B., Port Alfred, Que., Quebec City, Que., Montreal, Que., Toronto, Ont., Vancouver, B.C., and Victoria, B.C.

Medical facilities for the examination of passengers arriving by air are located at the following airports: Gander, Nfld., Stephenville, Nfld., Reserve, N.S., Moncton, N.B., Dorval, Que., Ottawa, Ont., Malton, Ont., Winnipeg, Man., and Vancouver, B.C.

Departmental hospitals for the treatment of immigrants are located at Halifax, N.S., Saint John, N.B. and Quebec City, Que. These hospitals are well equipped and provide up-to-date facilities for diagnosis, treatment and recreation for the patients.

Departmental x-ray facilities are available at London, Liverpool, Glasgow and Paris overseas and at Halifax, N.S., and Quebec, Que., in Canada.

Immigration Medical statistics will be found in the following tables.

TABLE 21
(Immigration Medical Service)
SUMMARY OF ACTIVITIES
FISCAL YEAR 1954-1955

CANADA:

Immigrants medically inspected on arrival at ocean and air ports.....	143,631
Non-immigrants medically inspected on arrival at ocean and air ports.....	29,822
Certified as "prohibited" under Immigration Act, Section 5, (a) and (b).....	66
Certified as physically defective, Section 5 (c).....	630

OVERSEAS—(United Kingdom, Continent of Europe and Orient)

Prospective emigrants medically examined.....	153,556
Certified as "prohibited" under Immigration Act, Sec. 5, (a), (b), (e) and (i)....	2,455
Certified as physically defective, Section 5 (c).....	14,127
Re-examinations.....	31,585

United Kingdom:

Prospective emigrants medically examined.....	46,045
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Continent of Europe:

Prospective emigrants medically examined.....	103,445
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Orient:

Prospective emigrants medically examined.....	4,066
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(Table 21 continued)

DETAILS OF EXAMINATIONS

EXAMINATIONS OVERSEAS:

	Examinations	Re-examinations
By Canadian Medical Officers in British Isles.....	39,985	8,418
By Roster Doctors in British Isles.....	6,060	1,312
By Canadian Medical Officers on the Continent.....	99,270	21,110
By Roster Doctors on the Continent.....	4,175	723
By Roster Doctors in the Orient.....	4,066	22
 Total — 1954-1955.....	153,556	31,585
Total — 1953-1954.....	225,019	40,167
 BRITISH ISLES:		
Belfast by Canadian Medical Officers.....	1,878	1,014
Glasgow by Canadian Medical Officers.....	7,141	2,351
Liverpool by Canadian Medical Officers.....	8,822	2,062
London by Canadian Medical Officers.....	22,144	2,991
Belfast area by Roster Doctors.....	73	4
Dublin area by Roster Doctors.....	971	311
Eire area by Roster Doctors.....	217	27
Glasgow area by Roster Doctors.....	777	199
Liverpool area by Roster Doctors.....	1,855	374
London area by Roster Doctors.....	2,167	397
 CONTINENT:		
Athens by Canadian Medical Officers.....	3,492	340
Azores and Portugal by Canadian Medical Officers.....	1,700	0
Berlin by Canadian Medical Officers.....	4,258	1,078
Bremen by Canadian Medical Officers.....	2,753	436
Brussels by Canadian Medical Officers.....	2,872	1,025
Copenhagen by Canadian Medical Officers.....	1,644	251
Hamburg by Canadian Medical Officers.....	3,822	501
Hannover by Canadian Medical Officers.....	8,276	1,688
Hanau by Canadian Medical Officers.....	3,865	629
Karlsruhe by Canadian Medical Officers.....	8,552	1,855
Linz by Canadian Medical Officers.....	7,334	2,148
Munich by Canadian Medical Officers.....	3,441	683
Paris by Canadian Medical Officers.....	5,867	861
Rome by Canadian Medical Officers.....	29,742	7,305
The Hague by Canadian Medical Officers.....	11,652	2,310
Finland by Roster Doctors.....	686	123
Malta by Roster Doctors.....	395	221
Norway by Roster Doctors.....	1,079	108
Portugal by Roster Doctors.....	121	7
Sweden by Roster Doctors.....	716	185
Switzerland by Roster Doctors.....	1,178	79
 ORIENT:		
China by Roster Doctors.....	3,594	.....
India by Roster Doctors.....	355	22
Pakistan by Roster Doctors.....	117	.....
 Total:.....	153,556	31,585

(Table 21 continued)

DETAILS OF EXAMINATIONS

EXAMINATIONS IN CANADA:	—	Immigrants	Non- Immigrants
Gander, Nfld.....		4,282	3,435
St. John's, Nfld.....		485	268
Halifax, N.S.....		37,259	1,469
Sydney, N.S.....		38	162
Saint John, N.B.....		1,747	354
Montreal, Que.....		2,124	800
Quebec, Que.....		61,271	9,565
Dorval, Que.....		6,597	7,658
Malton Airport, Ont.....		2,386	1,228
Toronto, Ont.....		1,233	.....
Fort Erie, Ont.....		6,958	692
Niagara Falls, Ont.....		5,314	675
Vancouver and Airport, B.C.....		2,964	1,539
Victoria, B.C.....		248	223
Others.....		10,725	1,754
Totals.....		143,631	29,822

TABLE 22
(Immigration Medical Service)

CASES PRESCREENED IN OTTAWA

Chest Films interpreted.....	12,540
Medicolegal problems considered.....	341
Medical cases reviewed.....	13,194
Total cases dealt with.....	13,535

TABLE 23
(Immigration Medical Service)
CERTIFICATIONS UNDER SECTION 5 OF THE IMMIGRATION ACT

	CANADA		BRITISH ISLES		CONTINENT OF EUROPE		ORIENT		TOTAL
	Ocean and Air Ports	Examined by Can. M.O's.	Examined by Can. M.O's.	Examined by Roster Drs.	Examined by Can. M.O's.	Examined by Roster Drs.	Examined by Roster Drs.	Examined by Roster Drs.	
Certified under:									
SS ^(a)									
Mental Diseases and Defects.....	18	112	15	233	12	2	392		
SS ^(b)									
Chronic Infectious Diseases.....	48	400	62	1,327	36	182	2,055		
SS ^(c)									
Physical Defects.....	630	3,505	580	8,795	424	193	14,127		
SS ^(e)									
Prostitutes, etc.....					1	1			1
SS ⁽ⁱ⁾					3	4			7
Chronic Alcoholism.....									
Total.....	696	4,020	657	10,360	472	377	16,582		

SICK MARINERS SERVICE

The Sick Mariners Service administers Part V of the Canada Shipping Act which provides for a levy of sick mariners dues on ships arriving in Canada and for free medical care and hospital treatment for their crews. This Act was originally drawn to prevent foreign seamen who were ill on arrival in Canada from becoming public charges in seaport cities and towns but was later extended to cover coastal and fishing vessels. The service was first operated by New Brunswick but became a federal responsibility in 1867.

Medical and surgical care, including hospitalization, consultants, special nurses and drugs, is provided for all conditions except permanent insanity for such period as is necessary up to one year. Modern sick mariners clinics care for outpatients at Sydney, Halifax, N.S.; Saint John, N.B.; Quebec, Montreal, Que., and Vancouver, B.C.

For a great many years the Sick Mariners Service has utilized the hospital facilities of the Department of Veterans Affairs at Saint John, N.B. During the year the arrangement was extended to a number of other ports on an experimental basis. The arrangement proved so satisfactory that sick mariners are now being admitted to Veterans Affairs hospitals in Halifax, Saint John, N.B., Quebec, Montreal, and Vancouver. In all, 141 hospitals have been authorized or appointed to treat sick mariners. The number of port physicians, consultants and specialists employed during the year was 697.

The majority of sick crew members on vessels paying sick mariners dues make full use of the free treatment facilities. During the fiscal year 1954-55 the sick mariners dues collected amounted to \$309,921.83. The total cost of treatment amounted to \$801,720.26. A total number of 37,798 seamen received treatment for 47,142 diseases or injuries. Of this number 3,501 seamen required admission to hospital. The total number of crew members on vessels paying sick mariners dues was 114,123. Under treatment from this group were 121 cases of pulmonary tuberculosis, an unadjusted rate of 106 per 100,000 persons.

Tables relating to this Service follow.

TABLE 24
(Sick Mariners Service)
CLASSIFICATION OF DISEASES AND INJURIES TREATED

DISEASE	CASES TREATED
Tuberculosis of respiratory system.....	121
Syphilis and its sequelae.....	2,556
Gonococcal infection.....	1,319
Dysentery, all forms.....	15
Other infective diseases commonly arising in intestinal tract.....	146
Typhus and other rickettsial diseases.....	1
Malaria.....	1
All other diseases classified as infective and parasitic.....	151
Malignant neoplasms, including neoplasms of lymphatic and haematopoietic tissues.....	54
Benign neoplasms and neoplasms of unspecified nature.....	223
Allergic disorders.....	876
Diseases of thyroid gland.....	210
Diabetes mellitus.....	7
Avitaminosis and other deficiency states.....	29
Anaemias.....	1,215
Psychoneuroses and psychoses.....	899
Vascular lesions affecting central nervous system.....	907
Diseases of eye.....	626
Diseases of ear and mastoid process.....	991
Rheumatic fever.....	85
Chronic rheumatic heart disease.....	131
Arteriosclerotic and degenerative heart disease.....	97
Hypertensive disease.....	404
Diseases of veins.....	723
Acute nasopharyngitis (Common cold).....	3,915
Acute pharyngitis and tonsillitis, and hypertrophy of tonsils and adenoids.....	1,716
Influenza.....	2,793
Pneumonia.....	664
Bronchitis.....	2,480
All other respiratory diseases.....	1,966
Diseases of stomach and duodenum, except cancer.....	3,147
Appendicitis.....	441
Hernia of abdominal cavity.....	643
Diarrhoea and enteritis.....	698
Diseases of gallbladder and bile ducts.....	1,020
Other diseases of digestive system.....	4,399
Nephritis and nephrosis.....	516
Diseases of genital organs (male).....	828
Boil, abscess, cellulitis and other skin infections.....	2,003
Other diseases of skin.....	1,835
Arthritis and rheumatism, except rheumatic fever.....	1,483
Diseases of bones and other organs of movement.....	999
Other specified and ill-defined diseases.....	217
Accidents, poisonings, and violence (external cause).....	91
Occupational accidents and occupational poisonings.....	2,021
Accidents and poisonings not specified as occupational.....	1,480

TABLE 25
 (Sick Mariners Service)
 Revenue, Expenditure and Deficit Classified
 According to Type of Vessel
 CALENDAR YEAR 1954

Classification of Vessel	Revenue		Expenditure		Deficit		Deficit Expressed as Percentage of Revenue
	\$	c.	\$	c.	\$	c.	
Foreign-going.....	293,936.18		384,024.00		90,087.82		31
Coasting.....	3,370.64		24,051.61		20,680.97		614
Fishing.....	10,718.99		307,860.58		297,141.59		2772
Government.....	1,896.02		84,982.35		83,086.33		4382
Additional expenditure not classified as to type of vessel.....					801.72		.....
Totals.....	309,921.83		801,720.26		491,798.43		159

WELFARE BRANCH

Introduction

A new social security program was added to those administered by the Welfare Branch with the coming into force of the Disabled Persons Act on January 1, 1955. The other programs remained the same, namely, family allowances, old age security, old age assistance, and blind persons allowances. The Speech from the Throne announced the government's intention of amending the Blind Persons Act to lower the age limit and to raise the income ceilings.

The Disabled Persons Act was assented to on June 26, 1954. In September, 1954, the federal and provincial authorities held a meeting to discuss regulations under the Act. The Old Age Assistance Division is responsible for the federal administration of the disability allowances, except for the medical part of the plan. All provinces have entered into agreements under this Act, eight effective from January 1, 1955, and two from April 1, 1955.

There was a small increase in the number of recipients of old age assistance, and a slight decrease in the number of recipients of blind persons allowances.

The number of beneficiaries of family allowances and old age security increased once more. Family allowances had the highest increase in the number of accounts since 1949. Improved school attendance was also reported. An increasing number of direct payments are being made to Indian and Eskimo recipients.

The National Physical Fitness Act was repealed on June 15, 1954. As a result of this, the National Council on Physical Fitness no longer exists and the financial aid to the provinces under this program is discontinued. The provinces having agreements with the federal government continued to receive financial assistance until the expiry of their agreements on March 31, 1955. The remaining members of the staff of the Physical Fitness Division became part of the Welfare Branch Administration.

Applications of welfare organizations for incorporation under the federal Companies Act were examined by the Welfare Branch at the request of the Secretary of State.

The Excise Tax Act was amended in 1950 to provide for the exemption from sales tax of public institutions devoted to the care of children, the infirm, and the aged, if the institutions are certified by the Minister of National Health and Welfare as meeting the requirements of the Act. Seventeen institutions were certified during the fiscal year. This brings the total of institutions certified to 386. Starting with the month of December, biennial questionnaires were sent to 55 institutions and, on the basis of information received, it was necessary to cancel the certification of two institutions.

Research continued in welfare and social security. Substantial progress was made in a series of studies of provincial legislation affecting families and children, including desertion, adoption, and neglected and dependent children. The development of services for older people in Canada and abroad was also under review, with particular attention to housing and institutional care, employment and retirement, and social services. Studies released during the year included *Changes and Developments in Child Welfare Services in Canada 1949-53*, *Mothers' Allowances Legislation in Canada* and *Survey of Welfare Positions, Report*.

Representation on certain interdepartmental committees was provided by the Welfare Branch Administration. These included the Civil Defence Policy Committee; the Interdepartmental Advisory Committee on Immigration, and its Subcommittee on Migration Policy; the Interdepartmental Committee on Social Security; the Interdepartmental Committee on Unemployment Questions; the Interdepartmental Committee on the Federal-Provincial Conference; the Interdepartmental Committee on Television; the Suggestion Award Board; the Interdepartmental Group on Technical Assistance.

Members of the Department were active in various capacities in the International Conference of Social Work, which was held in Toronto, June 27 to July 2, 1954.

The Welfare Branch was requested to make arrangements for the selection of candidates for the Queen Elizabeth Scholarships offered in Canada by the Nursery Training School of Boston.

The Welfare Branch continued to arrange programs for those awarded social welfare fellowships and scholarships by the United Nations for study in Canada. Fellowship holders were received from the following countries: Egypt, France, Israel. Scholarship holders came from the following countries: Bolivia, Burma, China (Taiwan) (2), India and Pakistan.

The Executive Assistant to the Deputy Minister of Welfare, Mrs. D. B. Sinclair, was the Canadian representative to the United Nations Children's Fund (UNICEF). She attended meetings of the Program Committee and of the Executive Board held in New York in September, 1954, and March, 1955. She accompanied the Program Committee on an official trip to Central America in May, 1954.

The main Welfare Branch expenditures were:

	<u>Administration</u>	<u>Net Benefits</u>
Welfare Branch	\$ 32,257.65	\$
Family Allowances)	2,519,694.83	366,465,964.95
Old Age Security)		353,205,333.42
Old Age Assistance)	97,843.05	20,869,126.09
Blind Persons Allowance)		2,886,184.15
Physical Fitness	45,250.49	236,650.62
 Totals	 \$2,695,046.02	 \$743,663,259.23

FAMILY ALLOWANCES AND OLD AGE SECURITY

Once more, during the year ended March 31, 1955, there was a considerable increase in the numbers of both Family Allowances and Old Age Security accounts maintained by this Division. The developments which occurred during the year were those brought about by this increase and by the implementation of new and revised procedures designed to add to the efficiency of the operations carried on in all Regional Offices.

The number of active Family Allowances accounts, which was 2,131,329 at March 31, 1954, grew to 2,208,235 at March 31, 1955, an increase of 76,906. This increase, which appears to be directly related to the particularly high birth-rate, was the largest to occur in one year since 1949-50. In that year a large increase took place because of registration for allowances of Newfoundland children, after the entry of Newfoundland into Confederation. The number of active Old Age Security accounts was 752,438, at

March 31, 1955, an increase of 29,962 over the number at March 31, 1954, which was 722,476. The combined increase in Family Allowances and Old Age Security accounts totalled 106,868.

One of the results of the continuing expansion in the work of all Regional Offices has been an acute problem regarding space for the maintenance of the necessary records. The Division has had for some time authority to destroy "dead" files when a certain time has elapsed after their cancellation. Records of active accounts, however, make the problem of storage a critical one, especially in certain Regional Offices. It was decided, therefore, to request authority for the destruction of specified material considered non-essential to the efficient operation of the two programs. This authority was granted by Treasury Board on March 11, 1955. While the "stripping" operation will be time-consuming, it is expected that the saving in space will more than justify the work involved. Even with these procedures in effect, however, some Regional Offices, particularly the one at Toronto, will still be critically short of working space.

In the course of the year, the Manual of Family Allowances Directives was completely revised and a new manual issued, consolidating administrative policy and procedures adopted over the years during which the Family Allowances program has been in operation.

By Order-in-Council P.C. 1955-456 dated March 30, 1955, certain amendments were made to the Family Allowances Regulations. One of the amendments, which was made on the recommendation of the Indian Affairs Branch, provides for a change in the handling of applications for Family Allowances made by parents who are members of certain Indian Bands. In effect, it places these parents in exactly the same position, insofar as Family Allowances are concerned, as other Canadian parents. Formerly, Indian Superintendents had handled these matters for all Indian parents. It is highly probable that, gradually, more and more Indian parents will be included among those to whom the recent amendment refers. Other amendments made to the Family Allowances Regulations were comparatively minor in character.

Staff and Accommodation

There was one change in Regional Directors during the year under review. Mr. J. J. McGurran, who had been Regional Director of Family Allowances and Old Age Security for the province of Saskatchewan, and who had been appointed at the inception of the Family Allowances program, retired on August 31, 1954. As the result of a promotional competition, Mr. G. P. Allen was appointed to replace Mr. McGurran on October 1, 1954. Mr. Allen had previously served as Supervisor of Welfare Services in the Saskatchewan office, and in the same capacity in the Nova Scotia office.

At March 31, 1955, there were 836 permanent and temporary employees on the staff of the Division. The turn-over in staff during the year was somewhat less than in previous years.

Staff shortages in Welfare Sections have caused some concern. At the end of the year the Division had need of two senior social workers and four junior social workers. There were, therefore, six vacancies out of a total of twenty-six positions in these sections. It is hoped these positions can be filled at an early date, in order that the duties performed by these sections may continue to be carried out efficiently.

Only one change in locations of Regional Offices occurred. The Family Allowances and Old Age Security office in Winnipeg moved to larger premises, thus relieving congested conditions.

Costs of Administration

The following is a comparison between the costs of administering the Family Allowances and Old Age Security programs in the fiscal years 1953-54 and 1954-55:

	<u>Dept. of National Health & Welfare</u>	<u>Dept. of Finance (Treasury)</u>	<u>Dept. of Public Works</u>	<u>Total</u>
1953-54	\$2,400,230.00	\$3,110,053.00	\$212,200.00	\$5,722,483.00
1954-55	\$2,519,694.83	\$3,589,436.66	\$217,296.29	\$6,326,427.78

The rise in the past year of the costs of administration reflects the rise in costs of many goods and services. In this connection, the Treasury expenditure for postage was \$1,679,983, an increase of \$393,654, largely due to higher postage rates.

Welfare Services

The year just ended was an active one for the Welfare Sections in Regional Offices. The work-load handled increased approximately 20 per cent over that of the previous fiscal year. Some 5,426 more cases flowed through the Welfare Sections; 761 more home visits were made by social workers of the Division; 205 more institutional visits were carried out. The increase in the volume of work was caused by a number of factors. The Welfare Sections have now completely taken over a share of the work in Old Age Security. This is mainly with regard to the appointing of trustees and the obtaining of reports from those trustees. Better interpretation to the staffs of other sections of welfare problems, in both Family Allowances and Old Age Security, has had the effect of increasing the number of referrals to the Welfare Sections. A greater stress on the need for home visits and visits to institutions has increased the number of such visits.

The only new work undertaken by the personnel of Welfare Sections during the year was in connection with the collection from Old Age Security payments of over-payments of Old Age Assistance. Regional Directors have used their senior welfare staff to assist in fixing the monthly amounts to be recovered. The social workers were also used to review cases of this type where the proposed stoppage or reduction of the pension would cause hardship to the pensioner. These cases were reviewed and appropriate recommendations made with regard to the spreading out of the collection.

FAMILY ALLOWANCES

General

The following table shows an increase in the numbers of families and children benefiting from Family Allowances in March, 1955, as compared to the numbers in March, 1954.

	<u>No. of Families</u>	<u>No. of Children</u>	<u>Expenditures</u>
March, 1955	2,195,027	5,169,042	\$31,179,567
March, 1954	2,116,709	4,942,044	29,812,438
Increase	78,318	226,998	\$ 1,367,129

Total net payments for the fiscal year 1954-55 were \$366,465,964 an increase of \$16,352,062 over the preceding fiscal year. Tables 26 and 27 appended hereto give additional details regarding payments of allowances.

Overpayments

Overpayments outstanding at the end of the year 1954-55 totalled \$294,164.45. At the end of the previous year, the total was \$324,336.54. Thus, there was a decrease of \$30,172.09. Of this decrease, \$24,744.54 in uncollectable overpayments were deleted by authority of Order-in-Council P.C. 1955-29/313 dated March 4, 1955. It will be seen that there was, when the portion deleted by Order-in-Council is accounted for, a net decrease of \$5,427.55. This is in line with the continual lessening of outstanding overpayments as each year passes, despite the hundreds of millions of dollars paid in Family Allowances each year. Table 28 appended hereto gives a break-down by categories of the outstanding overpayments at March 31, 1955.

Indians

There were 20,783 active Indian Family Allowances accounts maintained in Regional Offices at the end of March, 1955. This was an increase of 477 over the previous fiscal year. The effects of the amendment to the Family Allowances Regulations already mentioned will become apparent during the year 1955-56. It is understood that the Indian Affairs Branch is anxious to have those Indians who are considered capable of doing so handle such matters entirely on their own, though of course Indian Superintendents will be of assistance where necessary. This Division is in full accord with the aims of the Indian Affairs Branch in this regard. The accounts affected will no longer be listed among other Indian accounts, but will be included among the accounts of the general population. Indian parents concerned will be responsible for submitting registration forms directly to Regional Directors and for notifying the latter of all occurrences which affect the children's or the parents' eligibility for allowances.

Eskimos

At the end of March, 1954, there were approximately 150 Eskimo families receiving payment of allowances by cheque, out of a total of 1652 active accounts. At March 31, 1955, there were 1680 active Eskimo accounts, and the number being paid by cheque rather than in kind remained about the same. All of these cheques have been mailed in care of the R.C.M. Police. It was recently decided, however, in consultation with officials of the Department of Northern Affairs and National Resources and the R.C.M. Police, that these cheques should be mailed directly to the recipients. Another decision made recently, and one which is somewhat unusual, was that in a few cases only, the fathers of families should be made the beneficiaries of the allowances rather than the mothers. These are cases where the families concerned have requested the change, through the R.C.M. Police, because of the long distance which they have to travel to the nearest settlement where they receive the cheques and cash them, and where often it is not possible for a wife to accompany her husband on these trips.

School Attendance and Employment

The past year again saw a decrease in the number of children who lost allowances for one month or more because of non-permitted absences from school. In the year 1953-54, a total of 8,993 children lost allowances for this cause. In 1954-55, there were 8,660 such cases. It seems reasonable to conclude that attendance at school is improving steadily, when it is considered that the school population of Canada is increasing continuously, and that, generally, reporting by school authorities of cases of unsatisfactory attendance improves from year to year.

In this connection, the following is a quotation from the report of a School Supervisor contained in the annual report of the Department of Education of one of the provinces:

"The problem of poor attendance in the province was almost wholly eliminated by family allowance payments. On the whole, I think we should be well satisfied that

so far the Family Allowances Act has functioned fairly well, resulting in better economic conditions in our homes, and the raising of the standard of living conditions in the province. The children today are well fed and well clothed and there seems to be a general improvement in their health and their outlook on things in general. This has resulted in increased interest in school work and more progress in education."

OLD AGE SECURITY

General

The number of pensioners who received payment of Old Age Security pensions in March, 1955, was 745,620, an increase of 29,221 over the number receiving pensions in March, 1954. Total net payments for March, 1955, were \$29,760,404, an increase of \$1,152,946 over the net payment for March, 1954. Total net payments for the fiscal year 1954-55 were \$353,205,333. Table 29 appended hereto gives more detailed statistics on payments of Old Age Security pensions.

Proof of Age

As had been anticipated, the problems related to proof of age for applicants for Old Age Security pension appear to have lessened. There are two categories of items of evidence of age, known as Class A and Class B. Class A evidence for Old Age Security purposes consists of birth or baptismal certificates which meet certain standards. In the case of a birth certificate, it must be issued by the official registrar of births for the province of birth, or, in the case of foreign-born persons, by the appropriate authority. In addition, it must refer to a birth which was registered within five years from the date of birth or, in the case of delayed registrations, to a birth registered in accordance with certain standards of birth registration. With regard to a baptismal certificate, it must, in order to be considered as Class A evidence, be signed by a responsible officer of the church. In addition, it must refer to a baptism which took place within five years from the date of birth.

Birth or baptismal certificates which do not meet the standards mentioned, and all other items of evidence of age which are acceptable, are considered as Class B evidence.

For purposes of establishing age for Old Age Security purposes, one item of Class A evidence or two items of Class B evidence are required. A study was made before the end of the fiscal year to determine the percentage of applications approved on the basis of Class A and Class B evidence of age, and, in the case of the latter, the frequency of the various Class B items accepted to prove age. The study showed that in 79.2% of applications approved, Class A evidence of age was obtained. The remaining 20.8% were approved on the basis of Class B evidence. Table 30 appended hereto shows the frequency of the various items of Class B evidence accepted in the cases where applications were approved on the basis of Class B evidence.

In a relatively small number of cases, it was not possible to obtain satisfactory proof of age, and Regional Directors had recourse to tribunals, as provided for in the Old Age Security legislation. A total of 445 tribunals were held during 1954-55, as against 767 in the year 1953-54. In 304 cases among the 445 considered by tribunals, the results were favourable to the applicants. In the balance, 141, the results were unfavourable to the applicants, the tribunal members finding them younger than claimed, or being unable to reach a decision.

Administration of Pensions

The policy of giving exceedingly careful appraisal to cases where requests are received to have an Old Age Security pension diverted from the pensioner and paid to an administrator was emphasized strongly throughout the past year. In addition, periodic review of existing cases where administration had been approved was undertaken. The Old Age Security legislation authorizes the Director to pay a pension to a trustee in cases where he is satisfied that a pensioner, because of infirmity, illness, insanity or other cause, is incapable of managing his own affairs. This authority is used in a very limited number of cases. In March, 1954, the percentage of cases under administration was 2 per cent of all accounts. As a result of the emphasis on the policy mentioned, and the review of existing cases, it was possible, during the past year, to effect a slight further reduction in the percentage.

The year under review was one of satisfactory expansion and achievement in the administration of Family Allowances and Old Age Security pensions. This was due in large measure to the splendid co-operation of the members of the staff of this Division and that of the Chief Treasury Officer and his staff.

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TABLE 26
(Family Allowances and Old Age Security)

COMPARATIVE STATEMENT OF FAMILY ALLOWANCES PAYMENTS BETWEEN MONTH OF MARCH 1954 AND MONTH OF MARCH 1955

PROVINCE	Month of March 1954						Month of March 1955					
	Families Receiving		Children Receiving		Amount Paid	Families Receiving	Children Receiving		Number	Average Allowance per Family	\$	c.
	Number	Average Allowance per Family	Number	Average Allowance per Child			Number	Average Allowance per Child				
Newfoundland.....	55,102	17.70	163,292	5.97	975,386	56,692	17.91	169,760	5.98	1,015,309		
Prince Edward Island.....	13,205	16.22	35,441	6.04	214,221	13,142	16.54	35,812	6.07	217,348		
Nova Scotia.....	95,715	14.73	233,076	6.05	1,410,117	97,478	14.84	238,896	6.05	1,446,635		
New Brunswick.....	75,189	16.50	205,785	6.03	1,240,494	76,229	16.68	210,640	6.03	1,271,421		
Quebec.....	585,050	16.20	1,562,685	6.06	9,478,872	605,916	16.27	1,624,055	6.07	9,860,313		
Ontario.....	712,592	12.54	1,489,030	6.00	8,936,792	744,736	12.68	1,574,703	6.00	9,446,468		
Manitoba.....	116,238	13.11	253,803	6.00	1,523,682	119,594	13.26	264,274	6.00	1,586,168		
Saskatchewan.....	123,753	13.80	281,344	6.07	1,707,600	126,424	13.92	290,359	6.06	1,760,280		
Alberta.....	154,258	13.24	339,803	6.01	2,042,951	161,737	13.39	361,551	5.99	2,166,135		
British Columbia.....	181,241	12.26	367,834	6.04	2,221,465	188,471	12.45	388,442	6.04	2,346,398		
Northwest Territories and Yukon.....	4,366	13.94	9,951	6.11	60,858	4,608	13.69	10,550	5.98	63,092		
NATIONAL.....	2,116,709	14.08	4,942,044	6.03	29,812,438	2,195,027	14.20	5,169,042	6.03	31,179,567		

TABLE 21
(Family Allowances and Old Age Security)

NET FAMILY ALLOWANCES PAYMENTS—COMPARISON BY FISCAL YEARS

TABLE 28

OVERPAYMENTS OF FAMILY ALLOWANCES AS OF MARCH, 1955

(The overpayments may have occurred at any time between July 1, 1945 and March 31, 1955)

PROVINCE	Overpayments Recoverable by Deduction		Overpayments Recoverable by Collection		Overpayments Considered Uncollectable		Total Overpayments Outstanding	
	Number of Accounts	Amount	Number of Accounts	Amount	Number of Accounts	Amount	Number of Accounts	Amount
	\$ c.		\$ c.		\$ c.		\$ c.	
Newfoundland.....	29	690.00	55	1,613.50	21	375.00	105	2,678.50
Prince Edward Island.....	18	170.00	5	245.00	3	32.00	26	447.00
Nova Scotia.....	71	1,366.75	103	2,052.00	38	1,196.50	212	4,615.25
New Brunswick.....	33	2,111.00	89	2,257.00	138	6,496.00	260	10,864.00
Quebec.....	384	20,763.00	941	56,325.15	1,469	118,273.68	2,794	195,361.83
Ontario.....	132	5,286.00	588	15,269.60	266	11,720.50	986	32,276.10
Manitoba.....	30	1,767.00	77	1,440.75	56	2,707.00	163	5,914.75
Saskatchewan.....	66	3,020.00	73	2,192.00	56	2,792.30	195	8,004.30
Alberta.....	99	3,521.00	124	4,321.50	120	6,513.90	343	14,356.40
British Columbia.....	82	6,719.00	58	1,920.00	142	6,045.15	282	14,684.15
N.W.T. & Yukon.....	33	1,206.85	60	2,722.00	12	1,033.32	105	4,962.17
NATIONAL.....	977	46,620.60	2,173	90,358.50	2,321	157,185.35	5,471	294,164.45

DEPARTMENT OF NATIONAL HEALTH AND WELFARE

TABLE 29
(Family Allowances and Old Age Security)
STATISTICS ON OLD AGE SECURITY

PROVINCE	Number of Pensioners in Pay March, 1954	Net Payment for March, 1954 only	Number of Pensioners in Pay March, 1955	Net Payment for March, 1955 only	Total Net Payment for Fiscal Year Ended March 31, 1954	Total Net Payment for Fiscal Year Ended March 31, 1955
					\$	\$
Newfoundland	15,343	614,780	15,693	626,282	7,242,820	7,459,680
Prince Edward Island	6,669	267,220	6,786	272,250	2,203,780	3,261,800
Nova Scotia	36,961	1,481,253	37,801	1,516,140	17,702,477	18,149,526
New Brunswick	26,288	1,054,943	27,014	1,085,756	12,606,600	12,945,905
Quebec	152,682	6,080,598	158,109	6,303,599	72,032,527	74,724,977
Ontario	264,831	10,596,735	274,680	10,974,305	125,775,222	130,296,095
Manitoba	42,592	1,702,804	44,591	1,787,098	20,052,895	21,051,155
Saskatchewan	42,505	1,710,400	44,821	1,801,890	20,111,120	21,202,779
Alberta	42,868	1,723,890	45,384	1,824,033	20,137,730	21,418,246
British Columbia	85,191	3,355,955	90,201	3,547,380	39,880,100	42,449,810
N.W.T. & Yukon	469	18,880	540	21,671	225,520	245,360
NATIONAL	716,399	28,607,458	745,620	29,760,404	338,970,791	353,205,333

TABLE 30

(Family Allowances and Old Age Security)

FREQUENCY OF CLASS B ITEMS ACCEPTED TO PROVE AGE
FOR OLD AGE SECURITY APPLICANTS

	Percentage of Times Item Accepted
Census Records.....	26.8%
Immigration, Passport, Naturalization and Citizenship Records.....	15.2%
Birth and Baptismal Certificates (not Class A).....	12.1%
1940 National Registration.....	10.7%
Marriage Records.....	9.7%
Family Bible and Other Family Records.....	5.8%
School and Employment Records.....	4.7%
Other.....	15.0%

NOTE:

It will be recalled that, of the total number of applications 79.2% were approved on the basis of one item of Class A evidence of age. The remainder, 20.8%, were approved on the basis of two items of Class B evidence. Amongst the items of Class B evidence accepted in the 20.8% of the cases, certain items appeared more frequently than others. The table above gives, in percentages, the number of times each item of Class B evidence was accepted as compared with the total number of Class B items which were accepted.

Old Age Assistance, Allowances for Blind Persons and Allowances for Disabled Persons

Old Age Assistance

The agreements made by the Government of Canada with the ten provinces and the two territories under the Old Age Assistance Act continued in operation during the fiscal year 1954-55. With the exception of the one with Newfoundland, all agreements provide for a maximum amount of assistance of \$40 a month. In the agreement with Newfoundland the amount specified is \$30 a month. The maximum amounts of income are the maximum amounts allowed by the Act. These are \$720 a year in the case of an unmarried person, \$1200 a year in the case of a married person and \$1320 a year in the case of a married person with a blind spouse. The qualifying age specified in each agreement is sixty-five years. The residence requirement in the Act of twenty years in Canada can not be modified by the agreements.

There was only a small increase during the year in the number of recipients. As at March 31, 1955, the number was 94,625. As at March 31, 1954, it was 93,273. Federal expenditure for the fiscal year 1954-55 was \$20,869,126.09 as compared to an expenditure of \$20,288,152.60 for the fiscal year 1953-54. The federal government pays one-half of the cost of old age assistance.

The comparatively small increases in the number of cases and in the federal expenditure give a rather inaccurate impression of the operations under the Act. Actually the provinces handled 32,722 new applications during 1954-55. Of this number 27,688 were accepted and 4,232 were rejected. At the same time they transferred to old age security 20,987 persons who attained the age of seventy years during the fiscal year.

Transfers to old age security have had, and apparently, to an increasing extent, will continue to have the effect of keeping down the total number of recipients of old age assistance. Since the Old Age Assistance Act and the Old Age Security Act came into operation on January 1, 1952, the provinces have transferred a total of 53,209 recipients to old age security. The automatic termination of old age assistance payments at the age of seventy seems to be having a more important influence on the expenditure for old age assistance than was expected when the Old Age Assistance Act was passed by Parliament in 1951. At that time it was estimated that federal expenditure in the beginning would be about \$32,000,000 a year.

Federal administration is a responsibility of the Old Age Assistance Division in the Welfare Branch of this department. Members of the Division are stationed in provincial offices.

Allowances for Blind Persons

While the Speech from the Throne on January 7, 1955, referred to amendments to the Blind Persons Act lowering the age of eligibility and raising the income ceilings, Parliament had not dealt with the Bill at the close of the fiscal year 1954-55. There was, therefore, no change during the fiscal year in the agreements made by the Government of Canada with the provinces and the territories. In the agreements the amount of maximum allowance payable is specified as \$40 a month and the amounts of maximum income are the same as in the Act, namely, \$840 a year in the case of an unmarried person and \$1040 if there is a dependent child, \$1320 a year in the case of a married person and \$1440 if the spouse is also blind. The age requirement of 21 years in the

federal Act and the residence requirement of 10 years can not be modified by the agreements.

The number of recipients under the Blind Persons Act as at March 31, 1955 was 8,122. As at March 31, 1954 the number was 8,214. Transfers to old age security partly explained the decrease. Since the inception of the Act 1,363 recipients have been transferred to the federal old age pension.

In 1953-54 there were 1,856 persons who applied for allowances and in 1954-55 there were 1,624. Of the latter number 849 were granted allowances and 734 were rejected. Of the applicants rejected 552 failed to meet the medical test of blindness.

With a smaller number of recipients, federal expenditure decreased from \$2,914,102.07 for the fiscal year 1953-54 to \$2,886,184.15 for the fiscal year 1954-55. The federal government pays seventy-five per cent of the cost of blindness allowances.

Federal authorities deal with the medical part of the administration, the Chief of the Blindness Control Division in the Health Branch being responsible for the certification in all cases. Applicants are referred by the provinces to oculists employed and paid by the federal government. Oculists report their medical findings to the Chief of the Blindness Control Division. In certain cases the travelling expenses of oculists are also paid.

The financial part of federal administration is the responsibility of the Old Age Assistance Division in the Welfare Branch. Federal examiners who are members of the division are stationed in the provinces. Provincial accounts are audited at Ottawa.

Allowances for Disabled Persons

The Disabled Persons Act came into force on January 1, 1955. Eight of the ten provinces made agreements under the Act effective from January 1, 1955. The other two, namely, British Columbia and Newfoundland, made agreements effective from April 1, 1955. As at March 31, 1955, the territories had not submitted agreements although they had passed enabling legislation.

The agreements with all provinces specify \$40 a month as the maximum allowance payable. The amounts of income are the maximum amounts allowed by the Act. These are, \$720 a year in the case of an unmarried person, \$1200 a year in the case of a married person and \$1320 if the spouse is blind. The age of eligibility in all provinces is eighteen years, which is the minimum age specified in the Act. The residence requirement of ten years applies to all provinces and is not affected by the agreements.

The decision as to whether an applicant is totally and permanently disabled is based on federal regulations dealing with this matter. The general procedure is for a joint review of the medical information by provincial and federal medical officers. The medical officers may obtain advice from other sources, or, if they can not agree, they may refer the case to another physician for his decision. Under agreements, arrangements may be made for an equal sharing by the federal government and the provinces of the cost of special medical services, services of medical referees and certain transportation expenses.

During the fiscal year 1954-55 federal payments were made to five provinces. As at March 31, 1955, there were 7,166 recipients according to reports made by the provinces. Of this number the majority, 6623 were in Ontario. Most of these were, previous to January 1, 1955, recipients under a provincial plan which came into force on July 1, 1952. Presumably payments were made prior to March 31, 1955 by other provinces which, at that date, had not made any claims for federal reimbursement.

Federal payments to five provinces for the fiscal year 1954-55 were \$419,378.84. The federal government pays fifty per cent of the cost of allowances for disabled persons.

The allowances are administered by a provincial authority which, in most provinces, is the same officer or body administering old age assistance and blindness allowances.

Federal administration of the allowances is a responsibility of the Old Age Assistance Division in the Welfare Branch of the Department. The Medical Rehabilitation and Disability Advisory Services Division in the Health Branch is responsible for the medical part of the plan so far as the federal authorities are concerned. The details on medical matters will be found in the section of this report dealing with that service. Federal examiners and federal medical officers are stationed in the provinces.

Old Age Pensions

Although the Old Age Pensions Act was repealed on March 31, 1954, there were a few items of expenditure during the fiscal year 1954-55. Certain cheques issued while the Act was in operation were presented for payment. The total amount paid by the federal government in such cases during the year was \$414.26.

Certain provinces also refunded to the federal government seventy-five per cent of amounts received by them from pensioners or from the estates of deceased pensioners. The federal share of such payments was \$22,174.44.

As at March 31, 1955, the total of federal payments under the Old Age Pensions Act for pensions, other than pensions in respect of blindness, was \$810,926,896.64. The total amount of federal payments under the Act was \$836,855,351.39.

The amounts paid by the Government of Canada during the fiscal year 1954-55 for old age assistance and for allowances for blind persons and disabled persons, with relevant statistical information, will be found in tables 31 to 33, which follow.

TABLE 31
(Old Age Assistance Division)

NUMBER OF RECIPIENTS, AVERAGE MONTHLY ASSISTANCE AND TOTAL FEDERAL PAYMENTS, UNDER THE OLD AGE ASSISTANCE ACT, BY PROVINCES

For The Fiscal Year 1954-1955

PROVINCE	Number of Recipients	Average Monthly Assistance		Federal Payments 1954-1955	
		\$	cts.	\$	cts.
Alberta.....	5,341	36	67	1,165	331.91
British Columbia.....	7,868	37	76	1,872	909.14
Manitoba.....	4,847	37	64	1,119	638.96
New Brunswick.....	5,808	36	89	1,288	095.23
Newfoundland.....	5,073	29	38	898	972.70
Nova Scotia.....	5,178	33	63	1,063	165.10
Ontario.....	22,061	36	86	4,858	692.93
Prince Edward Island.....	612	27	54	98	531.00
Quebec.....	32,882	37	48	7,392	922.60
Saskatchewan.....	4,853	37	22	1,089	704.15
Northwest Territories.....	90	38	11	18	941.89
Yukon Territory.....	12	38	41	2,220	48
Total.....	94,625			20,869	126.09

TABLE 32
(Old Age Assistance Division)

NUMBER OF RECIPIENTS, AVERAGE MONTHLY ALLOWANCE, AND TOTAL FEDERAL PAYMENTS, UNDER THE BLIND PERSONS ACT, BY PROVINCES

For The Fiscal Year 1954-1955

PROVINCE	Number of Recipients	Average Monthly Allowance	Federal Payments 1954-1955
		\$ cts.	\$ cts.
Alberta.....	409	38.59	140,148.69
British Columbia.....	474	39.02	170,795.84
Manitoba.....	405	39.13	145,013.60
New Brunswick.....	706	39.49	256,747.58
Newfoundland.....	338	39.70	119,969.98
Nova Scotia.....	706	38.57	247,787.65
Ontario.....	1,731	38.73	607,709.18
Prince Edward Island.....	95	37.65	30,516.06
Quebec.....	2,866	39.18	1,028,750.38
Saskatchewan.....	374	38.58	132,670.19
Northwest Territories.....	16	40.00	5,175.00
Yukon Territory.....	2	40.00	900.00
Total.....	8,122	.....	2,886,184.15

TABLE 33
(Old Age Assistance Division)

NUMBER OF RECIPIENTS, AVERAGE MONTHLY ALLOWANCE, AND TOTAL FEDERAL PAYMENTS, UNDER THE DISABLED PERSONS ACT, BY PROVINCES

For The Fiscal Year 1954-1955

PROVINCE	Number of Recipients	Average Monthly Allowance	Federal Payments 1954-1955
		\$ cts.	\$ cts.
Manitoba.....	45	39.66	8,187.93
New Brunswick.....	177	39.46	8,183.06
Nova Scotia.....	285	33.39	12,141.04
Ontario.....	6,623	39.36	389,060.94
Saskatchewan.....	36	37.52	1,805.87
Total.....	7,166	.....	419,378.84

PHYSICAL FITNESS

The Physical Fitness Division continued to act as the agency for administering the fitness and recreation services made available under the terms of the National Physical Fitness Act. During the fiscal year 1954-55, in accordance with agreements entered into by the provincial departments concerned, the Provinces of Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Saskatchewan, and the Northwest Territories co-operated with the federal government under the terms of the National Physical Fitness Act.

The Division continued to provide a variety of professional, consultative and informational services for the assistance of provincial government departments and national organizations. It acted as a clearing house for the dissemination of information on recreation, fitness, physical education, community centres, drama, sports, the organization and administration of community and specialized programs, and related matters. Close liaison has been maintained with other countries and with the Commonwealth in particular, thus facilitating an exchange of publications and information on the latest developments abroad.

The total sum available for administration during 1954-55 was \$78,141.00. The total disbursements were \$45,250.49, leaving an unexpended balance of \$32,890.51.

Financial Assistance to Provinces

The National Physical Fitness Act (1943) made the sum of \$225,000 available annually, on a matching per capita basis, to the provinces for the promotion of fitness and recreation. In 1949, on the entry of Newfoundland into Confederation, an additional sum of \$7,000 was made available for grant purposes.

During the fiscal year 1954-55, a total of \$236,650.62 was paid in respect of financial assistance to the provinces. Of this sum, \$79,579.87 consisted of late payments for 1953-54. No claims were outstanding at the close of the fiscal year. The balance in the fund was \$.24.

The total provincial expenditures on Fitness and Recreation programs in 1954-55, over and above the amount received from federal financial assistance provided under the terms of the Act, was \$837,107.99.

Scholarships

Annual scholarships for advanced training in physical education and recreation were provided in 1948, as a means of overcoming the shortage of adequately trained key personnel in these fields. Since that time, 34 persons have been assisted in obtaining post-graduate training.

No scholarships were provided in 1954-55, due to the suspension of this portion of the program.

Informational Materials

Information relevant to fitness, recreation, physical education, cultural activities, community centres, reports on new projects and research in Canada and other countries, new procedures and developments, has been issued in bulletin form to provincial fitness and recreation offices and on request.

A number of publications will continue to be on a "for-sale" basis from the Queen's Printer. Experience has indicated that the new policy of placing some information materials on a "for-sale" basis, introduced during the latter part of the fiscal year 1953-54, has been well received. Its chief value lies in the fact that it is now possible for the public generally to obtain a sufficient number of copies of any one publication to carry on work in a particular activity.

Audio Visual Aids

During the year, seven blocks of visual aids, totalling 56 titles and including 14 films, ten filmstrips and 32 loops, were circulated to the provinces, where they were screened by 30 delegate committees.

In addition, this service was extended to include five centres in the Northwest Territories, with the co-operation of the Northern Administration Division of the Department of Northern Affairs and National Resources. Eleven blocks of selected visual aids (68 films, 47 filmstrips, and 13 loop films) will be used by these five centres during the period February 1954-August 1955.

On completion of the circuit screenings, the films are deposited with the Canadian Film Institute on extended loan for general use at a minimum service charge. The Preview Library consists of 216 films, 130 filmstrips, and 170 loop films.

The second supplement to the Division's Preview Library Catalogue, "Here's How to Do It", was issued in March, 1955. It contains information concerning additions to the Preview Library during the period January 1951 to January 1955.

No visual aid production was undertaken during the year.

REPEAL OF THE NATIONAL PHYSICAL FITNESS ACT

An Act to repeal the National Physical Fitness Act was passed on June 15, 1954.

National Council on Physical Fitness

The National Council on Physical Fitness, established by Act of Parliament, Chapter 29 of the Statutes of Canada, 1943, assented to July 24th and proclaimed October 1st, 1943, was charged with the responsibility of promoting the fitness of the people of Canada. The Council has not met since December, 1952, and ceased to function with the repeal of the National Physical Fitness Act.

Provincial Agreements

In order to provide an opportunity for the provinces to make the necessary adjustments in their own budgets, the repeal of The National Physical Fitness Act made provision for the continuance of financial assistance to the provinces in accordance with agreements in operation at that time. In effect, this meant that the provinces having agreements received financial assistance until March 31, 1955, when all agreements expired.

Pertinent statistics follow.

TABLE 34

(Physical Fitness Division)

SUMMARY OF ALLOTMENTS AND EXPENDITURES
PHYSICAL FITNESS DIVISION FOR THE FISCAL YEAR 1954-1955

ADMINISTRATION	\$	c.	\$	c.
Appropriation 1954-1955.....			78,141.00	
Expenditures 1954-1955				
Total salaries.....	25,704.60			
Prof. and Special Services.....	2,500.00			
Travel Expense.....	2,359.38			
Freight, Express and Cartage.....	1,027.36			
Postage.....	82.78			
Telephones and Telegrams.....	481.96			
Printing of Educational, Informational and Other Publications	8,810.41			
Educational and Informational Material Other than Publications.....	2,074.92			
Office Stationery, Supplies and Equipment.....	2,076.02			
Sundries.....	133.06		45,250.49	
Balance at end of fiscal year 1954-1955.....			32,890.51	
ASSISTANCE TO PROVINCES				
Balance from 1953-1954.....	75,537.86			
Appropriation 1954-1955.....	161,113.00			
Total available for grant purposes.....			236,650.86	
Expenditures 1954-1955				
Nova Scotia.....	10,641.25			
New Brunswick.....	8,540.00			
Ontario.....	152,273.00*			
Manitoba.....	12,859.75			
Saskatchewan.....	17,216.87†			
Alberta.....	15,558.50			
British Columbia.....	19,296.25			
Northwest Territories.....	265.00		236,650.62	
Unexpended balance.....			.24	

* This includes a late payment of \$76,136.50 for 1953-1954.

† This includes a late payment of 3,443.37 for 1953-1954.

TABLE 35
(Physical Fitness Division)

SUMMARY OF FINANCIAL ASSISTANCE TO PROVINCES — NATIONAL PHYSICAL FITNESS ACT

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Province	Population 1951 Census	Amount of grant (b) available	Payment of Grants according to Fiscal Year (a)									1944-55		
			1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1944-55
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	1944-55
P.E.I. . . .	98,429	1,630.00	774.49*	723.75*	1,861.00	1,861.00	1,861.00	1,861.00	1,858.50	1,858.50	1,858.50	1,858.50	1,858.50	12,395.74
N.S. . . .	642,584	10,641.25	7,418.43	6,747.50	10,077.08	8,685.40	14,001.98	11,426.92	10,415.36	9,260.69	10,940.57	10,641.25	10,641.25	112,665.83
N.B. . . .	515,697	8,540.00	.....	.....	.....	2,186.86	6,280.65	8,943.75	6,771.84	8,412.32	8,540.00	8,540.00	8,540.00	58,215.42
P.Q. . . .	4,055,681	67,163.25	Did not participate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Nil
Ont. . . .	4,597,542	76,136.50	.....	.....	.....	.....	.....	74,063.25*	74,063.25*	74,063.25*	74,063.25*	74,063.25*	74,063.25*	76,136.50*
Man. . . .	776,541	12,859.75	.....	2,692.44*	7,484.92*	7,933.66*	5,997.84*	7,237.93*	8,250.97*	9,573.45*	13,125.96*	12,859.75*	12,859.75*	12,859.75
Sask. . . .	831,728	13,773.50	.....	17,044.65*	17,545.75*	17,545.75*	17,545.75	17,520.75	17,520.75	17,520.75	13,773.50	13,773.50	13,773.50	184,528.77
Alta. . . .	939,501	15,558.50	.....	15,088.76*	7,981.77	15,515.61	19,488.12	14,671.79	16,463.71	15,567.75	15,558.50	15,558.50	15,558.50	167,020.76
B.C. . . .	1,165,210	19,296.25	16,015.75	.....	16,015.75	16,015.75	15,993.00	15,993.00	15,993.00	15,993.00	15,993.00	15,993.00	15,993.00	185,923.75
N.W.T. . . .	16,004	265.00	.....	.....	.....	234.00	234.00	234.00	234.00	234.00	234.00	234.00	234.00	265.00
Yukon. . . .	9,096	150.75	Did not participate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nfld. . . .	361,416	5,985.25	Did not participate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals .	14,009,429	232,000.00	23,434.18	49,555.12	87,699.75	89,635.29	78,884.76	79,678.56	150,675.42	152,249.71	155,532.03	170,195.50	236,650.62	1,274,190.94

(a) Payments made in any one fiscal year may include payments in respect of previous years.

(b) Initially, the sum of \$225,000.00 was pro-rated on a per capita basis for nine provinces. Later the amounts were re-calculated on the basis of nine provinces and two territories. When Newfoundland entered confederation, an additional \$7,000.00 was made available for that province. In 1952, re-calculations were based on the 1951 census and \$232,000.00.

(c) As agreements were renewed, the periods of agreement were changed to coincide with the fiscal year. This necessitated making agreements for periods other than twelve months in some cases.

*—Payment for claim of previous fiscal year.

TABLE 36
 SUMMARY OF PROVINCIAL EXPENDITURES, EXCLUSIVE OF FEDERAL FITNESS GRANTS PER FISCAL YEAR
 (Physical Fitness Division)

Province	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	Total 1944-1955
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	\$ cts.	\$ cts.	\$ cts.	
P.E.I.	774.49	1,861.00	11,052.03	18,125.73	8,141.48	11,166.50	14,673.40	.....	.....	.....	.....	65,794.63
N.S.	7,418.43	9,156.90	10,077.08	22,847.13	16,225.97	22,836.69	12,636.61	9,047.15	13,957.19	19,060.02	21,007.87	164,271.04
N.B. ....	.....	.....	.....	4,373.71	6,280.63	11,963.39	9,488.21	22,149.22	16,308.30	14,802.85	18,197.89	103,564.20
Ont. ....	.....	.....	.....	.....	.....	408,088.50	464,468.79	301,840.59	520,485.64	539,510.34	608,658.70	2,843,052.56
Man.	7,217.23	7,535.34	8,318.87	6,342.38	7,766.96	8,810.77	12,237.97	13,639.46	15,331.02	15,331.02	18,140.25	120,671.27
Sask.	37,212.93	39,960.82	56,901.96	30,999.29	29,211.83	29,293.29	38,307.75	45,840.22	54,675.06	54,675.06	64,874.62	444,322.41
Alta.	23,132.42	26,072.40	57,374.70	16,185.70	27,224.80	27,832.15	42,531.67	29,128.48	35,953.78	35,953.78	29,340.79	331,617.51
B.C.	47,630.57	55,523.03	74,916.67	86,185.35	107,511.63	105,607.80	115,720.82	125,819.41	67,503.49	67,503.49	71,350.08	892,585.55
N.W.T. ....	.....	.....	21,000.00	24,766.00	11,977.05	13,316.00	23,003.67	29,000.94	35,836.88	35,836.88	5,537.79	164,438.33

Note: The Provinces of Quebec and Newfoundland and the Yukon Territories have not participated in the National Physical Fitness Programme.

TABLE 37
 (Physical Fitness Division)
 ASSISTANCE TO PROVINCES AND PROVINCIAL EXPENDITURES UNDER NATIONAL PHYSICAL FITNESS ACT,
 RELATING TO 1954-55

Province	Department Responsible for Administration	Expiration of Current Agreement	TOTAL EXPENDITURES			Population 1951 Census	PER CAPITA EXPENDITURES(1)		
			Provincial \$ cts.	Federal \$ cts.	Total \$ cts.		Provincial \$	Federal \$	Total \$
Nova Scotia.....	Dept. of Education, Halifax	31 March, 1955	21,007.87	10,641.25	31,649.12	642,584	.0326	.0165	.0491
New Brunswick.....	Dept. of Education, Fredericton	31 March, 1955	18,197.89	8,540.00	26,737.89	515,697	.0353	.0165	.0518
Ontario.....	Dept. of Education, Toronto	31 March, 1955	608,658.70	76,136.50 (2)	760,931.70	4,579,542	.1329	.0165	.1494
Manitoba.....	Dept. of Health and Public Welfare, Winnipeg	31 March, 1955	18,140.25	12,859.75	31,000.00	776,541	.0233	.0165	.0398
Saskatchewan.....	Dept. of Education, Regina	31 March, 1955	64,874.62	3,443.37 (2)	82,091.49	831,728	.0779	.0165	.0944
Alberta.....	Dept. of Education, Edmonton	31 March, 1955	29,340.79	15,558.50	44,899.29	939,501	.0312	.0165	.0477
British Columbia.....	Dept. of Education, Victoria	31 March, 1955	71,350.08	19,296.25	90,646.31	1,165,210	.0612	.0165	.0777
Northwest Territories	Dept. of Northern Affairs and National Resources, Ottawa	31 March, 1955	5,537.79	265.00	5,802.79	16,004	.3460	.0165	.3625

NOTE:
 (1) Late payment for 1953-54 not included in summary of per capita expenditures for 1954-55.
 (2) Late payment for 1953-54.

CIVIL DEFENCE

General

The responsibility of the Civil Defence Division is to implement federal policy respecting those measures (preventive and remedial) that should be taken by or on behalf of the civil population in the event of an attack.

The five major functions of Civil Defence in Canada are:

- (1) To plan, co-ordinate and ensure implementation of a national Civil Defence program in conjunction with other departments of the Federal Government, Provincial Governments, Municipal Governments and other organized groups throughout Canada.
- (2) To ensure provision of an advance air raid warning system at designated target areas, in co-operation with provincial and local authorities.
- (3) To provide central training facilities for specialist instructors, and to supply publications, training aids and equipment, as necessary, to provincial or municipal training schools.
- (4) To carry out research and development for Civil Defence.
- (5) To ensure co-operation and co-ordination with other countries of the North Atlantic Treaty Organization in respect to Civil Defence.

Organization

Civil Defence continued to make marked progress during the year. To add impetus to civil defence activities, the Civil Defence Division was re-organized and experts in the fields of communications, transportation, health and welfare were enlisted. It is now comprised of the following branches and services.

- (a) Administrative Branch
- (b) Training and Operations Branch
- (c) Plans Branch
- (d) Transportation and Communications Branch
- (e) Public Relations
- (f) Secretariat
- (g) Library and Statistics
- (h) Health Services Branch
- (i) Welfare Planning Group
- (j) Canadian Civil Defence College, Arnprior.

Compensation Agreements

British Columbia, Alberta, Saskatchewan and Ontario have now signed Compensation Agreements with the federal government, permitting compensation to be made for injury or death to civil defence workers on a 50-50 basis. Similar agreements were being negotiated with Manitoba, New Brunswick and Newfoundland.

Canadian Civil Defence College—Arnprior

Training doctrines and principles, as well as methods of putting these concepts into effect, received intensive study, as did civil defence operation patterns and procedures.

Civil Defence equipment continued to be developed by testing and experimental work.

The organization of the College is comprised of a Commandant, an administration section and a training wing, having an overall complement of approximately 85 persons.

During the year, 56 courses were conducted and attended by 1,652 candidates from all parts of Canada.

The fields of study covered all phases of civil defence activities, including welfare, police, health, communications, rescue and warden training.

Health Services

Information respecting treatment procedures, casualty handling and regulation and research was gathered through advice received from numerous panels of the Defence Research Board and through specially-constituted working parties of specialists and recognized experts in the various Health Services fields. The subjects under constant review included blood, blood derivatives and transfusion services, mortician services, mental health, dental services, pharmacist services, nursing services, including nurses' aides and home nursing, surgical procedures, treatment of burns, mass casualty regulation, hospital organization and administration, first aid station organization and operation, first aid and home nursing training, training of physicians, organization of industrial medicine, first aid techniques, casualty simulation (for training purposes) and the defence against nuclear, biological and chemical warfare agents.

Progressive indoctrination of hospital administrators, chiefs of surgery and directors of nursing services of hospitals in Canada was carried out through a series of Hospital Disaster Planning Institutes conducted regionally across Canada. Four such institutes have been held for British Columbia-Alberta, Atlantic Provinces, Western Central Ontario and Quebec (English-speaking hospitals), respectively.

The first indoctrination course for physicians was held at the Canadian Civil Defence College during the last week of February. Candidates included the chiefs of medical services of 15 of Canada's largest industrial concerns.

During the year, a new section known as "Special Weapons" was added to Civil Defence Health Services to deal with the development of a program of research, planning and training for defence against nuclear, biological and chemical warfare agents. Special studies of the problem of radioactive fallout were made.

Late in 1954, initial steps were taken towards the solution of the psycho-social problems arising out of disaster. An Advisory Committee of Social Scientists was formed and initial consideration was given to all psychological and psychiatric problems which might arise as a result of dispersal tactics and strategic withdrawal, and generally with respect to panic control and the use of communications therewith.

Considerable organization took place with respect to the supplementary blood services which would be required in the event of mass casualties resulting from disaster.

Thirteen hundred nursing instructors received indoctrination in the civil defence aspects of nursing. Instruction in civil defence was extended through these trainees to some 30,000 nurses in Canada.

The first course in casualty simulation (for training purposes) was conducted at the Canadian Civil Defence College in February-March, 1955. During the year, a special committee concluded an extensive series of meetings for the purpose of preparing material for publication in the art of casualty simulation. By the end of the fiscal year, the manuscript was completed and publication is expected shortly. During this period also, the manuscript was completed for a new manual on the "Fundamentals of First Aid".

Civil Service Civil Defence (Ottawa)

The Civil Service Civil Defence organization (Ottawa) has now trained 3,583 in most phases of civil defence as of 31 March, 1955. These are organized into operational teams throughout 137 federal buildings in Ottawa.

During 1954, fire and evacuation drills were successfully staged in 60 of these buildings. A good percentage has received expert training at the Canadian Civil Defence College, Arnprior, on basic rescue, fire fighting and equipment handling; 1,150 have qualified in first aid. All have rendered invaluable assistance in casualty simulation courses at the College and in so doing received valuable training.

Research and Development in Civil Defence Matters

The Defence Research Board and the National Research Council were continually engaged in a number of projects related to thermonuclear weapons, the use of blood substitutes, shock therapy, effects of weapons and radiation detection.

Welfare Planning

The civil defence Welfare Group continued to round out plans and procedures with respect to all welfare aspects of civil defence. Pamphlets, guides, manuals, etc., were produced for use at federal, provincial and municipal levels for training and the planning of operations.

Ten Welfare courses were held at the Civil Defence College, Arnprior, providing training for 365 persons. These included courses in general welfare, emergency feeding, emergency clothing, emergency lodging, registration and inquiry.

Assistance was given the City of Brockville during a recent evacuation exercise by providing staff for emergency feeding and a registration service.

In July, 1954, the first "Registry and Inquiry" course was held at Arnprior. On 29 July, some 600 members of the Civil Service Civil Defence organization (Ottawa) participated in a "mass exercise" with considerable benefit to all.

Two welfare experts assisted Toronto and Ontario officials in the rehabilitation work following "Hurricane Hazel".

During the year, the first civil defence welfare film "The Homeless Ones" was produced and released. Considerable favourable comment has been received.

Co-ordination and Co-operation with Provincial Authorities

Since the civil defence plan is based on three-way co-operation between federal, provincial and municipal governments, its success obviously depends in a large measure on the co-operation shown by the other two levels of government. In this connection it is encouraging to report that provincial co-operation, particularly as evidenced in the financial assistance program, was considerably greater than in the previous year. Whereas in the fiscal year 1953-54, only five provinces had participated in the financial assistance program, this number was increased for 1954-55 to seven; and in one of the remaining provinces, Ontario, assistance was provided directly to a number of municipal civil defence organizations, even though Ontario itself did not directly participate. Before the end of the fiscal year, Ontario had announced that it would participate in the fiscal year 1955-56.

Apart from financial assistance, the level of activity in the civil defence field varies from province to province, with the western provinces showing, in general, more active interest than those in the east. By the end of the fiscal year, however, with the exception of Prince Edward Island and Quebec, where activity is at a minimal level, all provinces and most of their important municipalities were reasonably active.

Training

The tempo of training federal, provincial and municipal civil defence organizations was stepped up. During the year, 56 courses were conducted at the Canadian Civil Defence College, Arnprior, at which a total of 1,652 candidates attended. These courses covered the following main subjects: welfare, registration, emergency feeding, emergency clothing, police forums, police panels, orientation, communications, Civil Service fire fighting, rescue, tactics, general instructors, warden instructors, technical reconnaissance, training officers, staff courses and one harbour study.

In addition to the foregoing, the provinces have supplied the following statistics with respect to the recruitment of civil defence workers. These may be classified into two categories: those engaged on a full-time basis and those as citizen volunteers:

TABLE 38
(Civil Defence Division)
CIVIL DEFENCE WORKERS IN CANADA
(AS AT MARCH 31, 1955)

Province	Full Time	Citizen Volunteers	Training Completed
British Columbia.....	15,729	25,725	26,337
Alberta.....	14,472	11,525	22,625
Saskatchewan.....	4,258	8,914	745
Manitoba.....	2,150	8,898	6,945
Ontario.....	17,195	11,125	10,442
Quebec.....	17,523	11,943	4,079
New Brunswick.....	671	2,032	914
Prince Edward Island.....	.....	.....	253
Nova Scotia.....	.....	.....	.....
Newfoundland.....	14	106	.....
N.W.T. and Yukon.....	11	74	1
Federal HQ and College.....	114	.....	45
Civil Service C.D.....	5	4,495	2,920
Totals.....	72,142	84,847	75,306

The R.C.A.M.C. School at Camp Borden has also trained approximately 1,000 persons in Radiac Defence. Selected personnel from federal and provincial levels have attended training courses at the United States F.C.D.A. Staff College and the United Kingdom Staff College.

The St. John Ambulance Association recruited and trained sufficient civil defence first aid workers to staff 450 First Aid stations on the basis of 100 persons per station. Other civil defence volunteers such as rescue, fire, police and wardens received first aid training. As at 31st March, 1955, 10,970 persons in all had received either basic or advanced training from the St. John Ambulance Association.

The Department of Veterans Affairs continued to operate schools for the training of Nurses' Assistants at selected D.V.A. hospitals for and on behalf of this Department to meet the requirements of civil defence in the event of a major disaster. For this purpose, the Department of Veterans Affairs was reimbursed \$150,000, of which \$104,000 was for gratuities to trainees, \$39,000 for salaries to instructors and \$12,000 for affiliation fees, supplies and other miscellaneous items.

Supplies and Equipment

The federal government issued, as "free-issue", equipment having a value of \$313,000, to the provinces. The main items of issue were rescue vehicles, rescue training equipment, air raid sirens, radiacal reconnaissance kits, wardens' training first aid kits and assorted pyrotechnic supplies.

The provinces also received, as "free-issue", training aids in the form of films strips and slides. Included were such films as "The Homeless Ones", "Fires in the Home", "Rescue Skills" and "Industrial Plant Protection".

Training Exercises

A number of training exercises was participated in, notably "Exercise Alert No. 1" held jointly, on 14 and 15 June, 1954, by the United States and Canadian civil defence organizations. A temporary Canadian Civil Defence Control Centre was established at the Civil Defence College, Arnprior. A teleprint net-work linking the federal Control Centre with all provincial Civil Defence headquarters was set up. The use of this net-work during the test periods and during the exercise provided invaluable experience to federal and provincial civil defence staffs. While a trans-Canada net-work was established for the month of June, only a reduced net-work was maintained for the remainder of the year between Ottawa and the four western provinces, for training purposes.

St. John's, Newfoundland, conducted two token evacuation exercises.

Brockville, Ontario, held an evacuation exercise and 9,000 people were moved out of the city in 2,700 vehicles.

On 11 December, 1954, the Province of Ontario conducted a Control Centre Exercise (Exercise "Trillium"). Federal assistance was given by activating the federal Control Centre; physical assistance was given by specialists loaned by federal civil defence headquarters.

Warning and Communications

The early warning net-work, which was established in previous years between Canadian Air Defence Control Centres and provincial key points, was maintained and subjected to monthly tests.

Four hundred and eighteen two-tone sirens complete with control apparatus, were especially manufactured and supplied to federally-designated target areas at a cost to the federal government of approximately \$300,000; these are under constant tests to maintain maximum efficiency under all conditions. Experimental work was continued to determine the efficient operation of sirens under extreme temperatures.

Two communications courses were held at the Canadian Civil Defence College during May and December, 1954.

A mobile communications units was designed, together with required equipment. The unit was delivered late in the fiscal year.

Plans and specifications for a federal civil defence Control Centre at Arnprior were designed and prepared, together with equipment. Construction began late in the fiscal year and will be available for "Exercise Alert No. 2".

A comprehensive communications manual was published in standard printed form.

Continued action is being taken to gather data that will facilitate the determination of essential radio communication services.

Financial Assistance Program

As at 31 March, 1955, all provinces, with the exception of Ontario and Quebec, had entered into agreements with the federal government taking advantage of the federal civil defence grants appropriation as discussed at the 1954 Federal/Provincial Conference. The Province of Ontario, however, indicated its willingness to co-operate wholeheartedly with the federal agency during the fiscal year 1955-56.

In 1954, the federal government increased the amount of federal funds available for civil defence sharing purposes from \$1,400,000 to \$2,000,000 and increased the provincial quotas accordingly. Moreover, the method of sharing was made more flexible in that, for certain classifications, the federal government agreed to contribute 25 per cent of the cost irrespective of whether the provincial government contributed funds, and if the provincial government did contribute funds, the federal government would match the provincial contribution dollar for dollar to a maximum federal contribution of 50 per cent.

As a result of this new sharing policy, nine Ontario municipalities submitted projects and were reimbursed 25 per cent of their respective expenditures.

Of the \$2,000,000 provided for grants to provinces for general civil defence purposes, \$538,152 was committed and payments to provinces and municipalities totalled \$415,825. Quotas, commitments and payments by provinces are summarized below:

TABLE 39
(Civil Defence Division)
FEDERAL CIVIL DEFENCE GRANTS TO PROVINCES

Province	Quota	Commitment	Payments
			\$
Newfoundland.....	45,863	41,000	21,373
Prince Edward Island.....	10,827	.....	.....
Nova Scotia.....	92,128	41,902	17,925
New Brunswick.....	63,777	18,194	12,433
Quebec.....	603,375	.....	.....
Ontario.....	692,036	21,208	18,122
Manitoba.....	117,286	56,202	25,892
Saskatchewan.....	91,490	53,779	42,807
Alberta.....	118,922	118,922	118,922
British Columbia.....	187,272	186,946	158,350

Hose Coupling Standardization Program

The federal government committed itself by Federal/Provincial agreement to meet one-third of the cost of standardization of hose couplings. British Columbia, Alberta and Ontario have entered into contracts with the federal government, with the federal share of the program to be as follows:

Ontario	\$367,000
British Columbia	82,000
Alberta	60,000

The program in Ontario has now been completed, with British Columbia and Alberta approaching completion.

Stockpiling of Emergency Medical Supplies and Equipment

The stockpiling of medical supplies and equipment has continued steadily since 1952, with the greatest progress being made during the year 1954-55.

As of 31 March, 1955, supplies amounting to approximately \$4,000,000 had been ordered. Of this amount, supplies totalling nearly \$3,000,000 had been delivered. Plans were made to complete the original \$9,000,000 program by 31 March, 1957.

The program will be rounded out through the purchase of remaining requirements, including blood derivatives, plasma, volume expanders, transfusion equipment, supplies and equipment for defence against special weapons, clinical and portable laboratories, and certain other requirements for emergency hospitals.

During the year, the matter of regional storage facilities for the medical stockpile was studied and specific recommendations made by the Interdepartmental Committee respecting the acquisition, location and administration of such storage depots.

Public Information

During the year, two new booklets were produced on "Basic Rescue Skills" and "Fires in the Home" for distribution to the provinces. Preliminary work was begun on a semi-technical booklet entitled "Fundamentals of First Aid" for the use of instructors. A well-illustrated text book known as "Casualty Simulation" was completed for distribution early in 1955. As a result of the advent of the hydrogen bomb, an extensive rewriting program was begun on booklets respecting shelter, basic training, mutual aid areas and reception areas.

A group of posters "Justin Case" and a series of posters "Be Alert" were designed and distributed to the provinces.

Working in conjunction with United States civil defence authorities, a 13 minute film "Front Lines of Freedom" was produced and scheduled for release in the summer of 1955. Brought to the planning stage was a film on survival under atomic attack. News clips and short training films on rescue and welfare subjects were completed.

Short radio dramas were produced, recorded and distributed across Canada and were aired on 110 independent broadcasting stations, and a number of news clips and films was provided to TV stations.

Civil defence display models ranging from 10 to 30 feet were built at the request of provincial and municipal civil defence organizations. A large number of films, maps, charts and innumerable other training aids was produced for civil defence purposes.

Two civil defence informational conferences were held in March, attended by representatives of the public relations staffs of provincial and local civil defence organizations and top ranking newsmen from all media and agencies across Canada.

Close liaison with opposite numbers in the United States F.C.D.A. and with provincial and local organizations was maintained.

Status of Civil Defence Organization

Progress of civil defence organization by communities, by provinces, is shown in the appended table, which classifies communities according to the following formula:

1. Municipalities where the organization of civil defence is complete, where a full-time or part-time Director has been appointed or where it is broken down into the various services and training is carried out;

2. Municipalities where the organization is in progress and general training is being carried out, but where the organization has not yet been broken down into the services carrying out training;
3. Municipalities where organization has commenced, that is to say, a Committee has been formed and some planning has been carried out, but very little training carried out.

TABLE 40
(Civil Defence Division)
STATE OF PREPAREDNESS, BY COMMUNITIES, BY PROVINCE

	1	2	3
British Columbia.....	31	37	39
Alberta.....	20	26	227
Saskatchewan.....	1	59	20
Manitoba.....	2	3	81
Ontario.....	72	29	105
Quebec.....	1	2	47
Nova Scotia.....		14	21
New Brunswick.....	1	4	4
Prince Edward Island.....			1
Newfoundland.....			3
Northwest Territories.....			4
Yukon.....			2
 Total.....	128	174	554

ADMINISTRATION BRANCH

The Administration Branch of the department consists of the following Divisions: Departmental Secretary's, Information Services, Legal, Library, Personnel, Purchasing and Supply, and Research and Statistics.

Because these divisions serve the entire department both in Ottawa and in the field new and increased activities elsewhere in the department resulted in a greater volume of work for all divisions of the Administration Branch.

DEPARTMENTAL SECRETARY'S DIVISION

Responsibilities of the Departmental Secretary's Division continued to fall into two broad classes—those which the Departmental Secretary carried out personally and those which were carried out largely by the staff of the division.

Included among the first group were (a) acting as financial adviser to the department in respect of many aspects of its work; (b) assisting the Minister and the Deputy Ministers in the long and complicated procedure related to the preparation and approval of the departmental estimates from the time they were first drafted until they were approved by Parliament; (c) acting as the Deputy Ministers' substitute with respect to the approval of accounts payable, travel claims, requests for encumbrances, requests for transfers between allotments, submissions to Council and to Treasury Board, and other financial documents; (d) preparing material for tabling in Parliament; and (e) carrying out many special projects which were assigned from time to time.

The second group of responsibilities were borne by the various Sections of the division as follows:

The Registry Services carried out all phases of the work relating to the custody, circulation, and retirement of the department's official records. This involved the operation of a central registry and eight sub-registries in Ottawa, and the provision of advice, assistance and a certain degree of supervision in respect of records in many departmental establishments across Canada. The reorganization and standardization of the records system and related procedures in all establishments of the Food and Drug Directorate was completed. New or completely revised file series were also created for a number of other divisions. Mail, messenger and truck services at head offices continued to be provided by this section.

The Accounts and Estimates Section continued to assist in providing financial advisory assistance to the department and relieving directors and chiefs of the burden of maintaining accounting records and of routine administrative duties related to financial matters. This section also carried out much of the detail involved in the preparation of departmental estimates and continued to act as liaison between the department and the Treasury Office serving it.

The work of the Correspondence Section consisted largely of preparing replies to the many thousands of letters and enquiries which were received on a wide range of health and welfare subjects.

Large quantities of booklets, leaflets and other documents continued to be reproduced in the Duplicating Section. Over 18,500,000 duplicating impressions were produced, representing a substantial increase over the previous year, and the many related operations increased accordingly.

The Secretarial Services Section again provided a central source of stenographic and typing assistance to the entire Department in Ottawa. As well, all typing and mat

work required in preparing material for reproduction in the Duplicating Section were done by the Secretarial Services. Varityper and I.B.M. Executive facilities were also available.

In addition, the Departmental Secretary's Office continued to act as the centre for information for the whole department and to carry out the wide range of duties which normally fall to the lot of the secretariat of a large organization.

INFORMATION SERVICES DIVISION

With the co-operation of mass communication media and of government and voluntary organizations in its field, the Information Services Division continued to carry on an active health, welfare and civil defence information program.

In its role as co-ordinator and central production agency for health education materials, the Division sponsored the Fifth Federal-Provincial Health Education Conference held at Ottawa at the end of May, when representatives of all provincial health departments discussed requirements and procedures with information officers and other departmental officials.

An Exhibition and Critique of its work was arranged by the division and was visited by parliamentarians, officials of government departments, representatives of the press, radio, film and television, the professions, citizens groups and others, as well as by delegates to the Health Education Conference. The visitors' comments on productions and procedures were recorded for study as a guide in the division's future programs.

Major events in which the division handled public relations arrangements included the continent-wide civil defence exercise "Operation Alert" on June 14, visits by Members of the Senate and House of Commons and of the Parliamentary Press Gallery to the Canadian Civil Defence College at Arnprior and to the Laboratory of Hygiene, and the announcement of results of the Canadian Weight-Height Survey. Staff from the division handled press relations for the International Conference on Social Work and also distributed health and welfare educational materials there and at the International Conference on Mental Health.

Projects

Generous publicity was provided by news media concerning the development of Canada's services to ensure the safety and well being of her citizens. A number of new productions by the division provided local authorities with educational tools which helped to stimulate public understanding of and participation in measures aimed at raising and maintaining health and welfare standards.

Press—The press made known the terms of joint federal-provincial legislation to benefit the blind and the totally disabled and gave generous news and editorial space to the work of the department's numerous services, often amplifying reports with illustrations.

On the occasion of "Operation Alert", a fully equipped newsroom was provided at the Canadian Civil Defence College, and newsmen were given every assistance in covering the day-long event.

Close co-operation with weekly and daily papers and their correspondents and staff reporters resulted in numerous stories and features on national health and welfare programs and personalities. The periodicals continued to make extensive use of the division's health column, cartoons and press fillers. News conferences were arranged on several occasions, enabling writers and commentators to obtain fullest first-hand information in discussion with the Minister or his representatives.

Radio—More than 100 radio stations from coast to coast again gave the department free time for the “Here’s Health” dramatizations, these transcriptions being broadcast weekly in both English and French. News reports, on-the-spot interviews and discussions relating to the department’s work and fields were broadcast frequently and many stations continued to carry the division’s daily public service “National Health Notes”.

Television—Through the co-operation of the Canadian Broadcasting Corporation and the National Film Board, the division was able to take frequent advantage of informational potentialities of the television screen. Some events in the department’s fields were reported visually as well as orally and the department’s health education films and publications continued to contribute to both radio and television programs.

Periodicals—The departmental magazine “Canada’s Health and Welfare” was issued by the division with contributions from many sections of the country and from specialists in varied fields. It was widely quoted and several articles from recent issues were reprinted in other publications. Supplements issued with the magazine this year covered Civil Service Health and Foot Health.

Production was also arranged of periodicals issued by other divisions and of the Annual Report.

Publications—Several new publications issued this year covered health and welfare subjects on which public information material was not available elsewhere.

Two folders produced for the Food and Drug Directorate, “Safe to Take” and “The Truth About Food and Drug Labels” were revised in the light of amendments to the Food and Drug Act and were reprinted in quantity.

The following new publications were produced: “Home Safe Home”, “Cerebral Palsy”, “Your Health Service”, “Catalogue of Indian Health Material”, “Nursing with Indian Health Services”, “Ear Trouble”, “Fluoridation”, “The Nursing Counsellor Service of the Civil Service Health Division”, “Assistant to the Nurse”, “Domestic Sewage Disposal (Fr.)”, “Sleeping Habits”, “Jealousy”, “Parent Education”, “Mental Health Clinics”, “Here’s How To Do It, (Supplement No. 2)”, “Track and Field” series of nine pamphlets, “Casualty Simulation”, “Fires in the Home”, “Emergency Clothing Manual”, “Basic Rescue Skills”, “Emergency First Aid”. At the year’s end two other publications, “Rheumatic Fever” and “Crooked Teeth—Crooked Faces”, were being printed.

An article was written for the Canadian Geographic Journal and reprints obtained under the title “Health for Indians and Eskimos”.

Displays and Posters

Displays were built by request for the use of local civil defence authorities and a number of maps, charts, and other training aids were produced for civil defence purposes. The division also established exhibits at conventions and fairs wherever possible to explain the department’s functions. Six sizeable displays for use next year were initiated including one to explain the department’s work generally and one to depict federal welfare provisions.

Sets of posters featuring the division’s cartoon characters “Justin Case” and “Bea Alert” were designed and were distributed to provincial civil defence authorities.

Posters were prepared and produced on “Chest X-rays”, “Breakfast”, “Tooth-Brushing”, “Immunization”, “Early Prenatal Care”, and “Family Allowances”.

Films and Filmstrips

Continued use was made of screen productions sponsored by the department. Efforts were made to enlarge the scope of films available to educational and community groups. The Mental Health Division's film formerly titled "Not Alone" was produced under the title "To Serve the Mind". It deals with the problem of mental illness and describes services available in Canada including those of family physicians, community mental clinics and psychiatric wards in hospitals.

The department joined with United States authorities in sponsoring production of a dramatic film entitled "Frontiers of Freedom", dealing with mass disaster and the means of dealing with it. The division produced a film for the Civil Defence Welfare Services entitled "The Homeless Ones", describing emergency feeding, housing, registration and other reception areas procedures.

Another film, made by the National Film Board for the CBC Television program "On the Spot", dealt with the work of the Food and Drug Directorate and additional prints were purchased for the department's use.

A number of filmstrips were made during the year, including "Infantile Diarrhea", "Protecting Baby from Infection", "An Indian in Hospital", "An Eskimo in Hospital", "Johnny's Magic Toothbrush", "Fear", "Destructiveness", "What is Nutrition?", and "Work of the Victorian Order of Nurses". Various newsclips were made.

During the year the National Film Board was obliged to curtail its assessment and advisory services relating to the department's Medical and National Health Film Libraries. However through the co-operation of the Canadian Film Institute, a non-government body active in the visual field, it was possible to arrange to handle enquiries concerning these libraries pending assignment of staff for the purpose, and a title listing of the films was produced for use until up-to-date descriptive catalogues can be issued. Seventeen films were added to the National Health Film Library and eighteen to the Physical Fitness Film Library.

Miscellaneous

Assistance was again extended to authors, script writers, lecturers and others in the collection and preparation of material for public presentation. The division co-operated with several leading periodicals both in Canada and abroad on writings concerning the department's work on related health, welfare or civil defence topics. Subjects covered included cancer and virus research, obesity, fluoridation of water supplies and welfare provisions.

Several groups visiting the department were told of its work and were given informational material for subsequent use by them. Two special meetings were held with representatives of communications media, advertising and public relations interests to consider how best to tell Canadians of the urgency of preparing to deal with mass disaster.

While carrying out its main functions relating to the department's scientific work, the division's Biological Photographic Laboratory took pictures of several aspects of research facilities and procedures and also frequently turned out prints for illustration purposes. Some color photography was required in this connection.

The growing popularity and usefulness of the division's material were indicated by an increase of more than 33 per cent over the previous year in the quantity of printed

matter distributed. Some 8,500,000 items, including nearly 1,000,000 French publications, were distributed, most of the shipments being in bulk to provincial services.

LEGAL DIVISION

During the past year the Legal Division provided professional services involving the furnishing of opinions, the preparation of contracts, agreements and other legal documents, and advice and assistance in connection with prosecutions and other litigation in which the department was concerned. Included in the last were prosecutions under the Food and Drugs Act, the Opium and Narcotic Drug Act and the Family Allowances Act.

The division was also concerned with the revision and consolidation of regulations, the drafting and revision of departmental legislation for submission to the Department of Justice, and the preparation of numerous submissions and recommendations to the Governor in Council and the Treasury Board.

The division's legal officers represented the department on various boards and on inter- and intra-departmental committees concerned with administrative and policy matters of all kinds.

DEPARTMENTAL LIBRARY

The Departmental Library continued with the selection, acquisition and organization of reference and technical books, serial publications, pamphlets and government documents on all phases of the department's work, for collections in Ottawa and in field establishments. This material was largely confined to publications that became available during the year and was assembled into already existing collections.

Arrangements which were made to receive material through the United States Book Exchange proved especially useful for the extension of files of periodicals on the social sciences.

Organization work, such as ordering and cataloguing, was done in the Main Library only, and finished records were supplied to other establishments and the National Library as required. Cooperation continued with the Industrial Division of the Penitentiaries Commission with respect to the binding of periodicals in their shops to meet standards and specifications.

With the opening of the new Virus Laboratory, the portion of the Laboratory of Hygiene collection pertaining to the work of the Virus Section was moved into the new building and other service arrangements were made.

Two annotated bibliographies on Social Welfare in Canada for the period July 1953 to June 1954 were compiled for publication in the United Nations Social Welfare Information Series.

PERSONNEL DIVISION

The Personnel Division continued its service to all directorates and divisions of the department in the areas of personnel management and organization.

There continued to be difficulty in recruiting and retaining professional and technical staff, which reduced considerably the stability which is essential if the department is to do its most effective work. The Personnel Division, in consultation with the Civil Service Commission, continued to explore all possible solutions of this problem.

The Personnel Division represented the department in the examination of staff estimates for the fiscal year 1955-56 under a new procedure approved by the Government. It is expected that this new procedure will allow more flexibility in day to day personnel administration and will assist in overcoming some difficulties.

In general, reasonable progress was made during the year in strengthening the organization of the department.

Personnel statistics follow.

TABLE 41
(Personnel Division)

STAFF STRENGTH BY DIVISION AT MARCH 31, 1954 AND MARCH 31, 1955

DIVISION	Strength, March 31, 1954		Strength, March 31, 1955	
	Full Time	Part Time	Full Time	Part Time
Minister's Office.....	23	.....	18	.....
Departmental Secretary.....	126	.....	128	.....
Information Services.....	29	.....	26	.....
Legal.....	6	.....	6	.....
Library.....	13	.....	16	.....
Personnel.....	41	.....	39	.....
Purchasing and Supply.....	25	.....	22	.....
Research.....	39	.....	38	.....
Health Administration.....	14	.....	15	.....
Blindness Control.....	4	.....	4	.....
Child and Maternal Health.....	6	.....	7	.....
Civil Aviation Medicine.....	5	.....	5	7
Civil Service Health.....	72	.....	78	.....
Dental Health.....	6	.....	6	.....
Epidemiology.....	14	.....	17	.....
Food and Drugs.....	211	.....	217	.....
Health Insurance Studies.....	17	.....	22	.....
Hospital Design.....	4	.....	4	.....
Occupational Health.....	39	.....	41	.....
Laboratory of Hygiene.....	89	.....	96	.....
Mental Health.....	6	.....	8	.....
Nutrition.....	21	.....	20	.....
Narcotic Control.....	25	.....	29	.....
Proprietary or Patent Medicine.....	6	.....	6	.....
Public Health Engineering.....	34	.....	33	1
Quarantine, Immigration Medical.....	388	18	389	18
Indian Health Services.....	1,360	60	1,409	57
Welfare Administration.....	4	.....	3	.....
Physical Fitness.....	9	.....	6	.....
Old Age Pensions.....	17	.....	15	.....
Family Allowances.....	839	.....	839	.....
Civil Defence.....	122	.....	127	.....
	3,614	78	3,689	83

TABLE 42
(Personnel Division)
GEOGRAPHICAL DISTRIBUTION OF STAFF AS AT MARCH 31, 1955

	Welfare Branch including Civil Defence	Directorate of Indian Health Services	Health Branch	Administration Branch	Total
Ottawa.....	99	.....	15	293	884
Northwest Territories.....	.....	56	19	.....	19
British Columbia.....	61	442	.....	.....	554
Alberta.....	54	366	5	.....	432
Saskatchewan.....	51	146	2	.....	202
Manitoba.....	51	87	24	.....	162
Ontario.....	322	347	31	.....	700
Quebec.....	212	24	206	.....	442
New Brunswick.....	44	5	21	.....	70
Nova Scotia.....	55	14	65	.....	134
Prince Edward Island.....	9	1	1	.....	11
Newfoundland.....	27	.....	10	.....	37
Overseas.....	.....	.....	125	.....	125
Total.....	.....	.....	.....	.....	3,772

TABLE 43
(Personnel Division)
CHANGES OF FULL TIME STAFF WITH SPECIAL REFERENCE TO PROFESSIONAL CLASSES

Classification	Number of authorized positions March 31, 1955	Number appointed during the fiscal year	Number transferred or promoted during the fiscal year	Number terminated during the fiscal year	Number of vacant positions March 31, 1955	Approximate number of terminations per 100 employees
Physicians.....	283	30	11	15	16	5
Dentists.....	12	162	1	2	2	...
Registered Nurses.....	448	3	26	137	30	31
Chemists.....	78	...	6	5	6	...
Bacteriologists.....	18	...	1	2	2	...
Pharmacists.....	4	1	...	1	1	...
Laboratory Technicians.....	110	17	4	13	9	10
Nutritionists.....	10	...	...	...	...	...
X-Ray Operators.....	18	5	...	...	6	...
Food and Drug Inspectors.....	36	10	11	3	3	5
Public Health Engineers.....	22	2	8	2	2	9
Social Workers.....	26	...	1	...	7	...
Information Officers.....	8	2	2	3	2	12
All Other Classes.....	3,182	866	159	763	393	...
	4,255	1,098	230	951	483	23

PURCHASING AND SUPPLY DIVISION

The Purchasing and Supply Division continued to meet the ever increasing departmental requirements for materials, equipment, supplies, accommodation, printing and stationery, telephones and other public utility services. This included contracting for and procuring scientific, technical and numerous other types of equipment for hospitals, laboratories, health units, clinics, the Civil Defence College, and quarantine and immigration stations, and involved shipments to the Northwest Territories, Eastern and Western Arctic, United Kingdom and Continental Europe by boat, rail, air, snowmobile, and even dog team.

The expansion in the volume of supplies was caused mainly by increased departmental facilities such as the new Virus Laboratory in Ottawa and five new Indian Health Services Nursing Stations at Pelican Narrows and Fort a la Corne in Saskatchewan, God's Lake Narrows and Split Lake in Manitoba, and at Sandy Lake in Ontario.

Research and testing of the Salk polio vaccine by the Virus Laboratory involved the importation by this division of several hundred Rhesus and Cynomolgus monkeys. This presented unusual problems as these monkeys have to be imported from India and the Philippines and are very susceptible to exposure, especially during the winter months.

An effort was made during the year to consolidate inventory and to set up standards and specifications on items for which no previous standards existed.

Approximately 13,500 requisitions were processed embracing almost every commodity and involving orders placed with manufacturers and suppliers in all parts of Canada and the United States and with other federal departments.

The division continued to operate and expand departmental stores in Ottawa and over 5,000 shipments were made from that source during the year.

RESEARCH AND STATISTICS DIVISION

The Research and Statistics Division continued to collect, analyse and evaluate social and economic data concerned with health and welfare planning and program operation, and to develop methods to assist in solving technical and administrative problems. Advisory and consultant services were provided on request to other directorates and divisions of the department and to other government and non-government agencies; joint research projects were carried out in co-operation with other divisions.

English and French editions of a number of important reports were published during the year, including *Voluntary Medical Care Insurance*, an analysis of the operation of voluntary plans in Canada; the *Survey of Welfare Positions Report*, which embodied the major findings of the survey of welfare personnel carried out at the request of the National Conference on Social Work; the *Study of the Functions and Activities of Head Nurses in a General Hospital*, a report on the study carried out by the division in the series sponsored by the Canadian Nurses' Association; *Mothers' Allowances Legislation in Canada, 1955*; *Changes and Developments in Child Welfare Services in Canada 1949-53*; and *Mental Health Services in Canada*.

Survey of Nursing Resources in Manitoba, a report on the pilot nursing survey carried out in that province by civil defence authorities with the aid of the division, was prepared, in co-operation with the Civil Defence Health Planning Group, for departmental publication and a manual on the conduct of nursing surveys was written for the use of civil defence health authorities. Co-operation was continued with the Dominion Bureau of Statistics in the preparation of bulletins reporting on the Sickness Survey; the report on *Permanent Physical Disabilities*, prepared by the division, was published as one of this series of bulletins.

A national resurvey of physicians was completed and a comprehensive study was made of the Sick Mariners Program and a departmental report prepared. An active role continued to be played in the development of the Disability Allowances Program and a number of documents on health and hospital insurance were prepared.

Health Problems

The division was concerned with a number of studies of health problems during the year. Co-operation with the Occupational Health and Epidemiology Divisions was continued in the survey being carried out for the International Joint Commission on health aspects of air pollution in the Detroit-Windsor area. A report was prepared for the Commission, based on preliminary analysis of data arising from the first eighteen months of the study and certain evaluation studies were also planned and carried out. The division continued its participation with the Dental Health Division in the various fluoridation surveys in which the department is concerned and a report, based on field studies, was prepared on the comparative efficiency of stannous and sodium fluorides in topical application to prevent dental caries.

The Special Committee of the Senate on the Traffic in Narcotic Drugs in Canada was assisted through the collection of a variety of relevant data and a study was made for the Narcotic Control Division of narcotic drug legislation in Canada. A review of criminal, mortality and other statistics relevant to the problem of alcoholism was carried out for the Chairman of the Manitoba Liquor Enquiry Commission. Staff members assisted in the preparation by departmental officers, under the direction of the Chief of the Epidemiology Division, of a report on trends in tuberculosis incidence and control from 1938 to 1953, designed to assist federal and provincial health authorities in evaluating the tuberculosis situation today; a comprehensive summary of tuberculosis services in Canada was also prepared for departmental use.

The division provided consultative services, including advice on study and survey plans, sample size, procedures for recording and tabulating observations and analyses of data on a number of projects, such as a study of etiologic factors in lung cancer and of the incidence of bronchiogenic carcinoma among uranium miners; an investigation of the relationship between tonsil operations and poliomyelitis paralysis; the feasibility of instituting an occupational morbidity reporting system; methods of determining trends in incidence of back injuries; certain aspects of the analyses of the National Height Weight Survey data and of the relation between nutrition and blindness; and the statistical analyses of a stillbirth and neonatal mortality project.

Review of health data from the Dominion Bureau of Statistics and other sources was continued. Questions dealt with during the year included particularly the incidence or prevalence of diseases and conditions or defects in Canada as a whole or in certain segments of the population. The building up of reference date on chronic illness and health problems of older people was continued. Enquiries were received respecting such diverse topics as the male-female ratio in prevalence of epilepsy, the incidence of leg fractures, data respecting industrial accidents and farm accidents, and the age distribution of accidental deaths. There were a number of questions respecting cancer, including its geographic distribution, and enquiries continued to be received respecting rural-urban health differentials.

Health Services

Final sections of the comprehensive report, *Canada's Health Services* were largely completed in co-operation with provincial health authorities and it was anticipated that the work would be ready for publication by mid 1955.

To assist the government of Newfoundland the Research Division prepared a draft of that province's final Health Survey Report, which included comprehensive descrip-

tions of health and hospital services in the province. The draft report was based on the surveys carried out by different persons and agencies, including the Research Division, under the Health Survey Grant of the National Health Program.

A comprehensive report on health services and conditions in Canada was drawn up for the Pan American Sanitary Bureau; this material will be included in the Bureau's "Summary of Reports of Member States 1950 to 1953" so that complete and reasonably comparable data on all countries in the Americas will be included for the first time in the Bureau's reports.

A comprehensive report on health resources and expenditures in the Yukon and Northwest Territories was prepared for the Directorate of Indian Health Services and assistance was given to the directorate in its planning for the development of a northern health service.

Copies of the monograph *Mental Health Services in Canada*, published in July, were made available to delegates to the International Congress on Mental Health held in Toronto. This memorandum, which covered all aspects of mental health work in Canada, was written in collaboration with the Chief of the Mental Health Division. The director of the division and supervisor of the Health Services Section participated in the technical sessions on research at the International Conference.

A detailed investigation was carried out for the Quarantine, Immigration Medical and Sick Mariners Division of different aspects of the Sick Mariners Service and a departmental report prepared, describing the history of the program and programs in other countries and giving statistical summaries of services provided and an analysis of costs.

A comprehensive report on the relation between federal and provincial programs for health services and hospital and medical care was prepared for study by an inter-department committee.

Memoranda were prepared on health services and legislation, including studies of the hospital situation in Canada, for departmental use, and the division continued to keep WHO informed as to changes in health legislation in Canada.

Other health service projects carried out during the year included: preparation of a section of a manual being produced by the Canadian Public Health Association for the use of Sanitary Inspectors; preparation of a list of medical officers in health units and municipal health departments for the use of quarantine officers; a report on poliomyelitis services in Canada for the Dominion Council of Health; and assistance to other departments, agencies and persons in the preparation of articles on health matters.

Assistance continued to be given to the Health Grant Administration and chiefs of divisions seeking advice concerning projects submitted under the National Health Program.

Health Methods

The division participated in the preliminary technical discussions concerning, and in the preparation of a statement of Canada's views and recommendations on, the review of the International Statistical Classification of Diseases, Injuries and Causes of Death at the international conference held in Paris in February 1955.

Assistance continued to be given to the Directorate of Indian Health Services in the development of a new statistical reporting system for hospital and other health facilities and conditions and a new Health and Treatment Services Reporting Form was devised in conjunction with the directorate. A reporting form was also prepared for the Indian Affairs Branch of the Department of Citizenship and Immigration, to be used in a survey of Indians discharged from tuberculosis sanatoria in an attempt to assess rehabilitation needs.

A small sample survey of medical examinations records was carried out for the Civil Aviation Medicine Division, to assist in obtaining certain anthropometric measurements needed for a cockpit visibility study.

A manual on the conduct of nursing surveys was prepared for the use of civil defence authorities. The manual, which covers all aspects of the development and carrying out of a survey of nursing personnel, was designed to provide uniformity between surveys in different provinces through use of a uniform questionnaire form and record procedures as well as to provide direction in the carrying out of the survey.

Members of the division continued to be called on to advise on a great variety of technical problems encountered in the work of other divisions.

Health Care

The division worked closely with the Principal Medical Officer, Health Insurance Studies, in carrying out a number of studies of hospital and medical care for the use of the department and a number of memoranda were prepared for departmental officials on various aspects of health insurance.

Voluntary Medical Care Insurance, an analysis of the operation of the principal agencies which have been developed under voluntary auspices to offer medical care insurance on a non-profit basis, was published. A report on selected public medical and hospital care programs was prepared for publication and a third volume was commenced, dealing with plans offered by private insurance companies as well as non-profit plans.

The division was represented at the first Medical Care Conference held in Quebec in June 1954 and a paper, *Non-Profit Medical Care in Canada* was presented by a member of the staff; this paper was published in the Canadian Journal of Public Health in 1956.

In co-operating with the Department of Labour the results of a questionnaire concerning group hospital and medical care plans in industrial firms were compiled and interpreted. An extensive analysis of government and consumer expenditure on health services and resources was undertaken for the use of departmental officials.

New developments in health insurance in Australia and Sweden were studied and departmental reports prepared, including an article on the new Swedish system for "Canada's Health and Welfare". Netherlands authorities reviewed a draft bulletin on health insurance in that country which was being made ready for publication.

A member of the division visited the United Kingdom in the autumn of 1954 to study the National Hospital Service for a six week period, with particular reference to organization, administrative functions and responsibilities, financial and budgetary controls and procedures at the central, regional and local levels. Special attention was paid to methods of controlling demands for hospitalization, the development of outpatient diagnostic and consultant services, and to the use being made of hospital utilization and morbidity data.

At the request of the New Brunswick Medical Society the supervisor of the Social Security Section accompanied the Director of Health Services to New Brunswick to discuss problems concerning the development of voluntary health insurance in the maritimes. Members of the division were called on to discuss problems connected with hospital insurance with provincial officials on a number of occasions.

Rehabilitation and Chronic Illness

The director continued to work with the National Co-ordinator and the National Advisory Committee on the Rehabilitation of Disabled Persons in matters relating to health and welfare aspects of Rehabilitation. As a member of the executive of the Com-

mittee he presented a paper at the Workshop on Rehabilitation held by the Canadian Conference of Social Work, and served as a member of the panel discussing rehabilitation of the disabled and disability allowances at the Northeast Conference of the American Public Welfare Association.

Study of rehabilitation and chronic illness services in Canada and other countries continued to be carried on in co-operation with departmental officers.

Welfare

The division continued to carry out studies of welfare and related services. Information on welfare programs was provided on request to other departments, agencies, universities and to the United Nations, and liaison was maintained with officials of public and private agencies in Canada and to some extent in the United States.

In the field of family and child welfare, bulletins on *Changes and Developments in Child Welfare Services in Canada 1949-53* and *Mothers' Allowances Legislation in Canada, 1955* were released for distribution. Substantial progress was made on several other studies of Canadian services, notably on deserted wives and children's maintenance legislation, adoption, neglected and dependent children, and public assistance.

At the request of the Canadian Welfare Council the division undertook to study child welfare reporting, with particular attention to the varying concepts and definitions on which reporting is based and the problems these present for uniform reporting. This study, in which a considerable period will be required to define the nature and the scope of the problem, will be carried out in consultation with an advisory committee set up within the Family and Child Welfare Division of the Council. The division prepared memoranda and advised on research questions involving institutional care for children, services for unmarried mothers, social assistance and other matters.

The development of services for the aging, both in Canada and abroad, was under continuing study during the year, with particular attention to building up reference data on institutional care and housing, recreation and counselling, programs of home care and co-ordination of services. The division provided consultative services with regard to research projects in the field of aging to a number of organizations on request. A member of the staff visited Washington and New York to inquire into programs and research studies being developed in this field in the United States. The director of the division served as a member of the Canadian Welfare Council's Committee on the Role of the Council in Relation to the Needs of the Aged, on the Council's recently constituted Committee on Aging under the chairmanship of Senator Fergusson, on the Committee on Aging of the American Public Welfare Association, and on the Interdepartmental Committee on Employment Problems of the Older Worker. The supervisor of the Social Security Section and a staff member of the division were also active on a sub-committee established by the latter group to study the effects of private pension schemes on the employment and retention in employment of older workers.

Work continued on welfare services for special groups and the supervisor of the Welfare Section represented the department on the Canadian Welfare Council's Committee on the Welfare Needs of the Immigrant. The director and members of the division participated in the Canadian Conference on Social Work and the International Conference on Social Work, where the director served as resource person for Canada on social security matters.

A bulletin on *Activities of the Federal Government Related to Recreation* was released as a reference document for the Physical Fitness Division.

Income Maintenance

The Division provided technical assistance in connection with various aspects of the new disability allowances program. Outlines of disability allowances schemes in five

countries were prepared and, in co-operation with officials of the department and of the Department of Labour and Veterans Affairs, a preliminary system for the recording of disabilities was adopted and preparations made for the setting up of a marginally punched card record system.

An extensive revision of *Expenditures and Related Data on Health and Social Welfare* was completed and reports prepared on government expenditures on health services, voluntary agency expenditures and expenditure data derived from the Canadian Sickness Survey.

The division was represented on an interdepartmental committee established by the Dominion Bureau of Statistics to set up and interpret the results of a survey of trusted pension plans and at the meetings of an interdepartmental subcommittee enquiring into the effect of pension plans on the employment and retention of older workers. Draft versions of a series of articles on characteristics of pension plans prepared by the Labour Department for publication in the Labour Gazette were reviewed.

Data concerning blind persons' legislation in a number of different countries were prepared for departmental officials and assistance was offered to other Divisions in carrying out studies dealing with projects such as the establishment of proof of age under the Old Age Security Program.

Manpower Studies

Research was continued into the supply and distribution of health and welfare personnel, with special reference to physicians, dentists, nurses and social workers.

A national resurvey of physicians, the first comprehensive survey since the National Health Survey of 1943, was carried out by postcard questionnaire, with the co-operation of the Canadian Medical Association and l'Association des Médecins de Langue Française du Canada, and was designed to check the accuracy of the records of the Physicians Register as well as to provide information for the use of the medical associations, the Defence Medical and Dental Services Advisory Board, and for civil defence purposes. The survey was reported on in *Survey of Physicians in Canada, 1954*.

Study continued on the problems of securing personnel for welfare services in Canada. The *Report on the Survey of Welfare Positions* was published during the year. This survey which was carried out at the request of the National Conference on Personnel on Social Work, embodies major findings of the first Canadian survey of welfare personnel on a national scale. In addition to providing an examination of the growth of welfare positions and assessing the requirements for graduate social workers in public and voluntary agencies and institutions in Canada, the report analyzes the broad range of data secured in the survey on the characteristics of different fields of work and types of positions, the composition and training of welfare staff, salary relationships, and the structure and size of welfare agencies and institutions.

Subsequent to the publication of the report, special memoranda on various aspects of the findings were prepared for the Personnel Committee of the Canadian Welfare Council in their 1954-55 study of the implications of the findings, in which the director of the division and the supervisor of the Welfare Section participated. At the request of the Personnel Committee, a summary of the report, with some additional data, was prepared for use as a reference document at the sessions on "Staffing our Social Agencies" at the annual meeting of the Canadian Welfare Council and for later distribution with the Personnel Committee's Report on *The Implications of the Survey* when this is completed. Some assistance was also given, on request, to other groups studying the findings. Two articles were prepared for publication in the Canadian Welfare Council's *Concerning Families and Children* and several papers were presented on the subject to professional groups.

At the request of the Civil Defence Health Planning Group, the division assisted in planning a survey of nursing personnel in Nova Scotia. During the year the results of the Manitoba Survey were analyzed and a report entitled *Survey of Nursing Resources in Manitoba* was published by the department.

Miscellaneous

A number of officials from provincial governments and other countries spent varying periods in the division to study different health and welfare problems; a research officer of the Newfoundland Department of Public Welfare spent an extended period with the division in the study of research techniques.

The Civil Service Commission was assisted in the drawing up of examinations for junior economists and candidates and of a schedule for assessing the relative responsibilities attached to different economist positions in social-economic fields.

Sections of the Canada Year Book and other official publications dealing with health, welfare and social security were prepared by the division as in other years. Articles were written for Canada's Health and Welfare on Planning for Older Persons in California, a United Nations' Study on the Adoption of Children, Rehabilitation in Australia, Old Age and Survivor's Insurance in the United States, the New National Sickness Insurance Program in Sweden and other subjects.

Assistance continued to be provided to private organizations and persons in the preparation of reports for publication related to the work of the department, and the division was represented on the editorial board of the Canadian Welfare Council's publication "Canadian Welfare".

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DEPARTMENT OF NATIONAL HEALTH AND WELFARE

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Executive Assistant, George M. Carty, B.A.

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G. D. W. Cameron, M.D., C.M., D.P.H., LL.D.

Deputy Minister of National Health and Welfare (Welfare)

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Assistant National Director, J. Albert Blais.

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Nova Scotia; P. H. Stehelin, Halifax.

New Brunswick; A. Nicholson, Fredericton.

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British Columbia; W. R. Bone, Victoria.

Yukon and Northwest Territories; Miss Norma O'Brien, Ottawa.

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PHYSICAL FITNESS DIVISION—*Assistant Director*, Doris W. Plewes, M.A., B.Paed., Ed.D.

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Deputy Co-ordinator, Maj. Gen. G. S. Hatton, C.B., O.B.E., D.S.O.

Chief Administrative Officer, M. P. Cawdron, M.A., B.Sc.

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INFORMATION SERVICES DIVISION, *Director*, Harvey W. Adams.

LEGAL DIVISION, *Legal Adviser*, R. E. Curran, Q.C., B.A., LL.B.

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PURCHASING AND SUPPLY DIVISION, *Chief*, J. A. Hickson.

RESEARCH DIVISION, *Chief*, J. W. Willard, Ph.D., M.A., M.P.A., A.M.

TRANSLATION OFFICE

Chief, G. A. Sauve

TREASURY OFFICE

Chief, T. F. Phillips

DIRECTORY OF DEPARTMENTAL ESTABLISHMENTS

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Jackson Building, Bank Street
 Birks Building, Sparks Street
 Booth Building, Sparks Street
 Garland Building, Queen Street
 No. 3 Temporary Building, Wellington Street
 Trafalgar Building, Queen Street
 No. 7 Temporary Building, Green Island

CIVIL DEFENCE COLLEGE

ARNPRIOR, Ont.—P.O. Box 2050

FAMILY ALLOWANCES AND OLD AGE SECURITY

ST. JOHN'S, Nfld.	29 Buckmasters' Field
CHARLOTTETOWN, P.E.I.	59 Queen Street
HALIFAX, N.S.	Industrial Building
FREDERICTON, N.B.	Federal Building
QUEBEC, Que.	51 Boulevard des Capucins
TORONTO, Ont.	122 Front Street West
WINNIPEG, Man.	138 Portage Ave. East
REGINA, Sask.	Dominion Government Building
EDMONTON, Alta.	10182 103rd Street
VICTORIA, B.C.	Federal Building

FOOD AND DRUG LABORATORIES

OTTAWA, Ont.	Tunney's Pasture
HALIFAX, N.S.	Dominion Public Building
MONTREAL, Que.	397 Common Street
TORONTO, Ont.	27-39 St. Clair Ave. East
WINNIPEG, Man.	Aragon Building
VANCOUVER, B.C.	Federal Building

FOOD AND DRUG OFFICES

OTTAWA, Ont.	Tunney's Pasture
HALIFAX, N.S.	Dominion Public Building
CHARLOTTETOWN, P.E.I.	100 Fitzroy Street
SAINT JOHN, N.B.	250 Prince William Street
SYDNEY, N.S.	Naval Administration Building
ST. JOHN'S, Nfld.	T.A. & B. Society Building
QUEBEC, Que.	92 Dorchester Street, St. Roch
THREE RIVERS, Que.	Post Office Building
SHERBROOKE, Que.	Whiting Block
MONTREAL, Que.	379 Common Street
TORONTO, Ont.	27-39 St. Clair Ave. East
BELLEVILLE, Ont.	12 Bridge Street
HAMILTON, Ont.	42 James Street North
KITCHENER, Ont.	Dominion Public Building

LONDON, Ont.	Dominion Public Building
WINDSOR, Ont.	137 Ouellette Ave.
SUDBURY, Ont.	Federal Building
PORT ARTHUR, Ont.	33 Court Street South
WINNIPEG, Man.	Aragon Building
SASKATOON, Sask.	219-22nd Street East
REGINA, Sask.	Federal Building
CALGARY, Alta.	Customs Building
EDMONTON, Alta.	Post Office Building
KAMLOOPS, B.C.	345 Victoria Street
VANCOUVER, B.C.	Federal Building
VICTORIA, B.C.	805 Government Street

IMMIGRATION MEDICAL SERVICE OFFICES Canada

GANDER, Nfld.	Gander Airport.
HALIFAX, N.S.	Immigration Building, Pier 21.
MONCTON, N.B.	Moncton Airport.
MONTREAL, Que.	379 Common Street and Dorval Airport.
QUEBEC, Que.	Immigration Hospital, Quebec-West.
SAINT JOHN, N.B.	Pier 9, Immigration Building.
ST. JOHN'S, Nfld.	Marshall Building, Water Street, P.O. E5109.
STEPHENVILLE, Nfld.	Harmon Field Airport.
TORONTO, Ont.	737 Church Street and Malton Airport.
VANCOUVER, B.C.	Immigration Building, foot of Burrard St. and Sea Island Airport.
VICTORIA, B.C.	Immigration Building.

Overseas

LONDON, England	61 Green Street, Mayfair, W.1.
BELFAST, North Ireland	65 Chichester Street.
GLASGOW, Scotland	18 Woodlands Terrace, C.3.
LIVERPOOL, England	34 Moorfields, Liverpool 1.
BRUSSELS, Belgium	230 rue Royale.
PARIS, France	38 Avenue de l'Opéra.
ROME, Italy	Via Nemorense, 90.
THE HAGUE, Holland	12 Carelvan Bijlandtlaan.
COPENHAGEN, Denmark	Vestagervej 5.
LINZ, Austria	Canadian Government Immigration Mission, Finanzegebaude, Ost.
KARLSRUHE, Germany	Canadian Government Immigration Mission, 11 Redtenbacherstrasse.
BREMEN, Germany	Canadian Government Immigration Mission, Bremen, Überseeheim, Neidersachsen- damm, Bremen-Neustadt.
HANOVER, Germany	10 Kirchroederstrasse.
BERLIN, Germany	Canadian Government Immigration Mission, Berlin-Zehlendorf, Berliner Str. 25.

MUNICH, Germany	Canadian Government Immigration Mission, Funk Kaserne, Block 1, Freimanner- strasse 218, Meunchen-Freimann.
HAMBURG, Germany	Canadian Government Immigration Mission, Admiralitaetstrasse, 46.
ATHENS, Greece	18 Anagnostopoulou St. Kolonaki.

SICK MARINERS CLINICS AND HOSPITALS

HALIFAX, N.S.	Immigration Building, Pier 21.
SYDNEY, N.S.	Marine Hospital.
SAINT JOHN, N.B.	Pier 9.
QUEBEC, Que.	Louise Basin.
MONTREAL, Que.	379 Common Street.
VANCOUVER, B.C.	Immigration Building.

QUARANTINE STATIONS AND SUB-STATIONS

HALIFAX, N.S.	Pier 21 and Rockhead Hospital.
SAINT JOHN, N.B.	Pier 9 and Quarantine Hospital, Lancaster, N.B.
QUEBEC, Que.	Louise Basin and Quarantine Hospital, Quebec-West.
MONTREAL, Que.	379 Common Street and Dorval Airport.
VANCOUVER, B.C.	Immigration Building and Sea Island Airport.
VICTORIA, B.C.	William Head, B.C.
GANDER, Nfld.	Gander Airport.
THREE RIVERS, Que.	Sub-stations under direction of Quarantine Officer in Charge of Quebec. There is a Quarantine Officer appointed in each port.
SOREL, Que.	
RIMOUSKI, Que.	
PORT ALFRED, Que.	

LABORATORIES OF HYGIENE

OTTAWA, Ont.	45 Spencer Street and Tunney's Pasture.
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OCCUPATIONAL HEALTH LABORATORIES

OTTAWA, Ont.	200 Kent Street. Health Radiation Laboratory, Laurentian Building.
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PUBLIC HEALTH ENGINEERING DISTRICT OFFICES

TRURO, N.S.	515 Prince Street.
MONCTON, N.B.	Post Office Building.
MONTREAL, Que.	379 Common Street.
ST. CATHARINES, Ont.	4th Floor, Dominion Building.
PORT ARTHUR, Ont.	Post Office Building.
WINNIPEG, Man.	Scientific Building, 425½ Portage Avenue.
EDMONTON, Alta.	Post Office Building.
VANCOUVER, B.C.	Begg Building, 110 West Georgia Street.
WILLIAM HEAD, B.C.	Quarantine Hospital.

INDIAN HEALTH SERVICES FACILITIES

Hospitals

Blood (Cardston), Alta.	Hobbema, Alta.
Brandon, Man.	Lady Willingdon (Ohsweken, Brantford), Ont.
Charles Camsell (Edmonton), Alta.	Miller Bay, B.C.
Clearwater Lake, Man.	Moose Factory, Ont.
Coqualeetza (Sardis), B.C.	Nanaimo, B.C.
Dynevor (Selkirk), Man.	North Battleford, Sask.
Fisher River (Hodgson), Man.	Norway House, Man.
Fort Alexander (Pine Falls), Man.	Sioux Lookout, Ont.
Fort Qu'Appelle, Sask.	
Gleichen, Alta.	

Clinics

Caughnawaga, Que.	Prince Albert, Sask.
Deseronto, Ont.	Sarnia, Ont.
Duncan, B.C.	Sydney, N.S.
Fort Smith, N.W.T.	The Pas, Man.
Hazelton, B.C.	Vancouver, B.C.
Kamloops, B.C.	

Nursing Stations

Bersimis, Que.	Little Grand Rapids (Proposed), Man.
Big Trout Lake, Ont.	Little Saskatchewan, Man.
Cape Dorset, N.W.T.	Manitowaning, Ont.
Copper Mine, N.W.T.	Massett (Proposed) B.C.
Cross Lake, Man.	Nelson House, Man.
Driftpile, Alta.	Onion Lake, Sask.
Eskasoni, N.S.	Osnaburgh, Ont.
Fort à la Corne, Sask.	Oxford House, Man.
Fort Chimo, Que.	Peigan (Brocket), Alta.
Fort George, Que.	Pelican Narrows (Proposed), Sask.
Fort Good Hope, N.W.T.	Pikangikum, Ont.
Fort McPherson, N.W.T.	Port Harrison, Que.
Fort Norman, N.W.T.	Pukatawagan (Proposed), Man.
Frobisher Bay (Proposed), N.W.T.	Rupert's House, Que.
God's Lake Narrows, Man.	Saddle Lake, Alta.
Goodfish Lake (Proposed), Alta.	Sandy Lake (Proposed), Ont.
Hay Lakes, Alta.	Split Lake (Proposed), Man.
Island Lake, Man.	St. Therese's Pt., Man.
Lake la Ronge, Sask.	Stoney (Morley), Man.

Lac Seul, Ont.	Tobique, N.B.
Lake Harbour, N.W.T.	Landsdowne House, Ont.
Leask (Mistawassis), Sask.	

Health Centres

Aklavik, N.W.T.	Mistassini (Seas.), Que.
Alert Bay, B.C.	Obedjiwan (Seas.), Que.
Amos, Que.	Oka, Que.
Big Cove, N.B.	Pangnirtung, N.W.T.
Broadview, Sask.	Parry Sound, Ont.
Calgary, Alta.	Peterborough, Ont.
Carmacks (Seas.), Yukon	Pointe Bleue (Roberval), Que.
Chapleau, Ont.	Portage la Prairie, Man.
Churchill (Proposed), Man.	Port Arthur, Ont.
Chesterfield, N.W.T.	Port Simpson, B.C.
Chippewa Hills, Ont.	Punnichy, Sask.
Christian Island, Ont.	Rapid Lake (Seas.), Que.
Fort Chipewyan, Alta.	Restigouche, Que.
Fort Francis, Ont.	Romaine (Proposed Seas.), Que.
Fort Rae, N.W.T.	Sandy Bay, Man.
Fort Resolution, N.W.T.	Sault Ste. Marie, Ont.
Fort Simpson, N.W.T.	Sept Iles, Que.
Greenville, B.C.	Shubenacadie, N.S.
High Prairie, Alta.	St. Paul, Alta.
Kamsack, Sask.	St. Regis, Que.
Kenora, Ont.	Sturgeon Falls, Ont.
Kingsclear, N.B.	Sydney, N.S.
Lennox Island, P.E.I.	Teslin (Seas.), Y.T.
Lillooet, B.C.	Tofino, B.C.
Maniwaki, Que.	Vanderhoof, H.C., B.C.
Manowan (Seas.), Que.	Vernon, B.C.
Massett, B.C.	Walpole Island, Ont.
Meadow Lake, Sask.	Waswanipi (Seas.), Que.
Merritt, B.C.	White Bear Lake (Carlyle), Sask. (Proposed)
Muncey, Ont.	Whitehorse, Y.T.
Notre-Dame du Nord (Temiskaming) Que.	Williams Lake, B.C.
Mingan (Seas.), Que.	

Health Units

Cardston, Alta.	Manitowaning, Ont.
Edmonton, Alta.	Miller Bay, B.C.
Fisher River, Man.	Moose Factory, Ont.

Fort Alexander, Man.	North Battleford, Sask.
Fort Qu'Appelle, Sask.	Norway House, Man.
Gleichen, Alta.	Ohsweken, Ont.
Hobbema, Alta.	Sardis, B.C.

Nurse—Dispenser

Coral Harbour, N.W.T.	Hanceyville, B.C.
Creekside, B.C.	Long Lac, Ont.
Fort Providence, N.W.T.	Lorette (Huron Village), Que.
Fort St. James, B.C.	Lower Post, N.W.T.

Administrative Offices

Edmonton, Alta.	Ottawa, Ont.
Fort Qu'Appelle, Sask.	Quebec, Que.
Halifax, N.S.	Regina, Sask.
Miller Bay, B.C.	Sardis, B.C.
Nanaimo, B.C.	Sioux Lookout, Ont.
North Bay, Ont.	Vancouver, B.C.
Norway House, Man.	Winnipeg, Man.

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